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# NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

TECHNICAL NOTE 3476

CALCULATED SPANWISE LIFT DISTRIBUTIONS AND  
AERODYNAMIC INFLUENCE COEFFICIENTS FOR  
SWEPT WINGS IN SUBSONIC FLOW

By Franklin W. Diederich and Martin Zlotnick

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Langley Field, Va.



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## SUMMARY

Spanwise lift distributions have been calculated for 61 swept wings with various aspect ratios and taper ratios and with a variety of angle-of-attack or twist distributions, including flap and aileron deflections, by means of the Weissinger method with eight control points on the semi-span. Also calculated for these plan forms were aerodynamic influence coefficients which pertain to a certain definite set of stations along the span. The information presented herein can thus be used both in the analysis of untwisted wings or wings with known twist distributions and in aeroelastic calculations involving initially unknown twist distributions.

This paper supplements and is intended to be used in conjunction with NACA TN 3014, where the same type of information, calculated in the same way, is presented for 19 unswept wings.

## INTRODUCTION

In the design of an airplane, a knowledge of the spanwise lift distribution on the wing is important in predicting structural loads and stability characteristics. For high-speed airplanes having flexible wings, the calculation of the spanwise lift distribution is an aeroelastic rather than a purely aerodynamic problem. In aeroelastic calculations, means are required for calculating the spanwise lift distribution expressed in terms of angle-of-attack (or twist) distributions which are initially unknown. Aerodynamic influence functions and coefficients are the most convenient means of accomplishing this purpose.

Several methods for calculating such aerodynamic influence functions and coefficients at arbitrary spanwise stations are developed and discussed in detail in reference 1. These methods employ either aerodynamic influence coefficients for prescribed spanwise stations or lift distributions for various prescribed continuous and discontinuous angle-of-attack conditions. For subsonic flow the required numerical values of

these quantities are presented in reference 1 for 19 unswept wings having various aspect ratios and taper ratios. The calculations were made on the Bell Telephone Laboratories X-66744 relay computer at the Langley Laboratory. A convenient matrix formulation of the Weissinger L-method, with eight control points on the semispan was used.

In the present paper, numerical results corresponding to those given in reference 1 are presented for 61 swept wings in subsonic flow. The calculations of the present paper have been made in the same manner as those of reference 1 and may be used in the same way. For instance, the methods described in the body and the appendixes of reference 1 for calculating aerodynamic influence functions and influence coefficients at arbitrary spanwise stations can be used in conjunction with the information presented herein because they apply to any sweep angle. The present paper may, therefore, be considered a supplement to reference 1, and in order to facilitate its joint use with reference 1 the calculated information is presented herein in the same way as in reference 1.

#### SYMBOLS

$A$	aspect ratio
$b$	wing span
$b_{ail}$	aileron span
$b_f$	flap span
$C_{BM}$	root bending-moment coefficient for unit angle of attack, $\frac{4 \times \text{Bending moment}}{qSb}$
$C_{D_i}$	induced-drag coefficient at a unit angle of attack
$C_L$	lift coefficient at a unit angle of attack
$C_{L_{1/2}}$	lift coefficient for one semispan of antisymmetrically loaded wing at a unit tip angle of attack, $\frac{L_{1/2}}{\frac{q}{2} \frac{S}{2}}$
$C_{L_a}$	lift-curve slope per radian for additional-type loading

$c_l$  rolling-moment coefficient

$$c_{ld} = -c_{lp}$$

$c_{lp}$  coefficient of damping in roll

$c$  wing chord

$c^*$  dimensionless chord,  $\frac{c}{b/2}$

$\bar{c}$  average chord,  $S/b$

$c_l$  section lift coefficient

$L_{1/2}$  lift on one semispan

$M$  free-stream Mach number

$q$  dynamic pressure

$S$  wing area

$V$  free-stream speed

$y$  lateral ordinate

$y^*$  dimensionless lateral ordinate,  $\frac{y}{b/2}$

$\bar{y}$  lateral ordinate of center of pressure of one semispan

$\alpha$  angle of attack, radians

$\Gamma$  vortex strength

$\Gamma^*$  dimensionless vortex strength or loading coefficient,

$$\frac{4\Gamma}{bV} = c^* c_l$$

$\Lambda$  angle of sweepback at the quarter-chord line, deg

$\lambda$  taper ratio,  $c_t/c_r$

[ Q ]      aerodynamic-influence-coefficient matrix  
 { }      column matrix

Subscripts:

a      antisymmetric  
 s      symmetric  
 r      root  
 t      tip

### PRESENTATION OF RESULTS

#### Spanwise Lift Distributions

Geometric characteristics of the 61 plan forms treated in this paper are given in table I. These plan forms, together with the 19 plan forms considered in reference 1, are also shown in figure 1. Lift distributions due to the following continuous symmetric and antisymmetric angle-of-attack distributions have been calculated for each of the 61 plan forms.

#### Symmetric angle-of-attack distributions:

Constant	$(\alpha = 1)$
Linear	$(\alpha =  y^* )$
Quadratic	$(\alpha = y^{*2})$
Cubic	$(\alpha =  y^{*3} )$
Straight-line	$(\alpha = \frac{c_t}{c}  y^* )$

#### Antisymmetric angle-of-attack distributions:

Linear	$(\alpha = y^*)$
Quadratic	$(\alpha = y^{*2} \text{ for } y^* \geq 0; \alpha = -y^{*2} \text{ for } y^* \leq 0)$
Cubic	$(\alpha = y^{*3})$
Quartic	$(\alpha = y^{*4} \text{ for } y^* \geq 0; \alpha = -y^{*4} \text{ for } y^* \leq 0)$
Quintic	$(\alpha = y^{*5})$

The straight-line angle-of-attack condition was included to represent actual structural twists where the surface of the wing is generated by straight lines so that the product  $c^*\alpha$ , the deflection of the leading edge, varies linearly with  $y^*$ ; that is

$$c^*\alpha = c_t^*y^*\alpha_t$$

or, for unit twist at the tip,

$$\alpha = \frac{c_t^*}{c^*} |y^*|$$

For untapered wings, the straight-line lift distribution is the same as the linear lift distribution, and for wings of zero taper ratio, it is undefined.

Lift distributions for flap-type and aileron-type angle-of-attack distributions are also presented. A correction has been made for the discontinuity in angle of attack by the method of appendix B of reference 1; this correction insures that the accuracy of the lift distributions for the discontinuous angle-of-attack conditions is of the same order as that for the continuous angle-of-attack conditions. The values of  $b_f/b$  and  $b_{ail}/b$  (ratios of the flap span to the total span and the aileron span to the total span, respectively) for which the lift distributions have been calculated are 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, and 1.0. As is usual, the flaps have been taken to be inboard and the ailerons outboard. The lift distribution for any flap or aileron configuration may be obtained, however, by linear superposition; thus, the lift distribution for an outboard flap extending, for example, from  $y^* = 0.5$  to  $y^* = 1.0$  can be obtained by subtracting the lift distribution for the inboard flap ( $b_f/b = 0.5$ ) from the additional lift distribution ( $b_f/b = 1.0$ ). A similar procedure can be used for inboard ailerons.

The lift distributions for the 61 plan forms considered are presented in figures 2 to 62. Table I serves as a table of contents for this group of figures. Parts (a) and (b) of each figure contain the lift distribution due to symmetric and antisymmetric continuous angle-of-attack distributions, respectively, for a given plan form, and parts (c) and (d) contain the lift distribution due to flaps and ailerons respectively, for the same plan form.

### Aerodynamic Parameters

The aerodynamic parameters  $C_{L\alpha}$ ,  $C_{EM}$ ,  $\bar{y}^*$ ,  $C_{D_i}$ ,  $C_{l_d}$ , and  $C_{L1/2}$ , calculated by the method of appendix A of reference 1, are presented in table II for the plan forms considered herein. The values of  $C_L$  and  $C_{EM}$  for a unit effective flap deflection, calculated in the same manner, are presented in table III, and the values of  $C_{L1/2}$  and  $C_l$  for a unit effective aileron deflection are presented in table IV.

These lift and moment coefficients pertain directly to full-chord flaps and ailerons set at an angle of attack (measured in the streamwise direction) of 1 radian. For partial-chord flaps and ailerons deflected by an angle of  $\delta$  radians about their hinge lines, these coefficients must be multiplied by the quantity  $\alpha_\delta \cos \Lambda_h$ , where  $\alpha_\delta$  is defined in terms of section properties as

$$\alpha_\delta = \frac{\frac{\partial c_l}{\partial \delta}}{\frac{\partial c_l}{\partial \alpha}}$$

and  $\Lambda_h$  is the angle of sweepback of the hinge line.

### Aerodynamic Influence Coefficients

#### for Stipulated Stations

Aerodynamic influence coefficients for symmetric and antisymmetric lift distributions were obtained by the method of appendix A of reference 1 and are presented as the matrices  $[Q_s]$  and  $[Q_a]$  in tables V(a) and V(b), respectively. Each influence-coefficient matrix in the table applies to a given plan form. These influence-coefficient matrices can be used to calculate the spanwise lift distribution for any continuous angle-of-attack condition from the following matrix expressions:

For the symmetric distributions,

$$\left\{ \Gamma_s^* \right\} = C_{L\alpha} [Q_s] \left\{ \alpha_s \right\}$$

For the antisymmetric distributions,

$$\{\Gamma^*_a\} = C_l d [Q_a] \{\alpha_a\}$$

In these expressions  $\alpha$  is the angle of attack at stations  $y^* = 0.9808, 0.9239, 0.8315, 0.7071, 0.5556, 0.3827, 0.1951$ , and 0, and  $\Gamma^*$  is the desired lift at those stations. In this paper the convention is that the angle of attack for the station nearest the wing tip ( $y^* = 0.9808$ ) is the first element of the angle-of-attack matrix  $\{\alpha\}$  and the lift at the same station is the first element of the lift distribution matrix  $\{\Gamma^*\}$ . The matrices  $[Q_s]$  and  $[Q_a]$  of table V are arranged accordingly.

If aerodynamic influence coefficients or aerodynamic influence functions are required for arbitrary stations, they may be calculated from the numerical data presented herein by the methods developed in reference 1.

#### DISCUSSION

The limitations of the Weissinger method have been discussed in reference 1 and elsewhere. To the extent that they apply to the results presented herein, they are summarized in the following paragraphs.

The results obtained by the Weissinger method apply only to angles of attack which are relatively small, because the method presupposes potential flow and at higher angles of attack the boundary-layer effects tend to become significant. In the case of swept wings these effects may be different from the effects on unswept wings, inasmuch as on swept wings a distinct leading-edge vortex may be formed at even moderate angles of attack. The effect of this vortex on the flow field is amenable to analytical treatment by potential-flow theory, but such an analysis is beyond the scope of this paper.

Basically, the Weissinger method applies to incompressible flow. However, by means of the three-dimensional Prandtl-Glauert rule it can be extended to compressible subsonic flow. This rule states that the pressure distribution, the lift, the rolling moment, and similar quantities for a wing with aspect ratio  $A$ , taper ratio  $\lambda$ , and angle of sweepback  $\Lambda$  flying at a subsonic Mach number  $M$  are equal to  $1/\sqrt{1 - M^2}$  times the

corresponding quantities for a wing with an aspect ratio  $A\sqrt{1 - M^2}$ ,

taper ratio  $\lambda$ , and angle of sweepback  $\tan^{-1}\left(\frac{\tan \Lambda}{\sqrt{1 - M^2}}\right)$  flying in an

incompressible medium at the same angle of attack. At Mach numbers approaching 1 the linearizations implied by this rule tend to lose validity; however, the results of linear theory (such as the Weissinger method in conjunction with the Prandtl-Glauert rule) are more nearly valid at very high subsonic Mach numbers for wings with high angles of sweepback and low aspect ratios than for unswept wings with moderate or high aspect ratios.

Inasmuch as the side of the fuselage tends to act as a reflection plate, a sweptback or a sweptforward wing with a large fuselage is equivalent, to a certain extent, to an M or a W wing, respectively. However, calculations of the lift distributions on M wings have indicated that the effects of the spanwise discontinuities in the local angle of sweepback are largely localized, so that the effects of nacelles and fuselage on the lift distribution at low angles of attack are not likely to be much larger for swept than for unswept wings.

The Weissinger method furnishes no information concerning the local chordwise centers of pressure. Some of the available theoretical information concerning this subject is summarized in reference 2 for sweptback as well as for unswept wings.

The Weissinger idea of concentrating the lift on the quarter-chord line and satisfying the boundary condition at the three-quarter-chord line, as well as the integral equation which constitutes the mathematical expression of this idea, is valid for the purpose of calculating lift distributions on all the plan forms considered herein and in reference 1. However, the numerical method used by Weissinger and also used herein and in reference 1 for solving this equation has the shortcoming that, unless many points are considered along the span, numerical difficulties arise at the root of swept wings of high aspect ratio and on all wings with zero taper ratio. Near the root, the difficulty stems from the fact that in the numerical treatment no points are considered between the root proper and a point at 20 percent of the semispan if eight points are used along the semispan (or 40 percent if four points are used). However, for a swept wing the kernel of the Weissinger equation, that is, the  $F(y, \eta)$  function of reference 1, varies rapidly near the root and, consequently, so does the lift distribution within a distance of about one-half root chord from the root. This rapid variation cannot be taken into account properly in the case of wings of moderate and high aspect ratios, for which one-half root chord amounts to only a small fraction of the semispan. Similarly, at the tip of a wing with zero taper ratio

the lift distribution goes to zero with finite slope, whereas in the numerical treatment of the Weissinger equation the assumption is implied that it goes to zero with infinite slope.

These difficulties result in incorrect values of the lift distribution not only near the root or tip, but sometimes over most of the span. Calculations by means of more accurate methods and comparison with experimental results have indicated that for highly swept wings of large aspect ratio or wings with zero taper ratio, calculations with four points on the semispan may lead to unreliable results. Consequently, eight points were used in the calculations described herein. Even so, the lift distributions are likely to be less reliable for these wings than for others, at least in the regions near the root or the tip, as the case may be.

The manner in which results of the type presented here can be used to calculate lift distributions for known and initially unknown angle-of-attack or twist distributions has been discussed extensively in reference 1; in particular, the relative merits of the various methods of obtaining aerodynamic influence functions and coefficients from such results are discussed therein at some length. The discussion is equally pertinent to the present paper and, therefore, will not be repeated here.

#### CONCLUDING REMARKS

For a variety of angle-of-attack conditions (including flap and aileron deflections), spanwise lift distributions and aerodynamic influence coefficients pertaining to a certain definite set of stations along the span have been calculated by means of the Weissinger method with eight control points on the semispan for 61 swept wings with various taper ratios and aspect ratios and the results are presented herein.

This information supplements that presented previously for 19 unswept wings in NACA TN 3014. It can be used in the analysis of untwisted swept wings or swept wings with known twist as well as in aeroelastic calculations involving initially unknown twist distributions.

Langley Aeronautical Laboratory,  
National Advisory Committee for Aeronautics,  
Langley Field, Va., June 14, 1955.

REFERENCES

1. Diederich, Franklin W., and Zlotnick, Martin: Calculated Spanwise Lift Distributions and Aerodynamic Influence Coefficients for Unswept Wings in Subsonic Flow. NACA TN 3014, 1953.
2. Diederich, Franklin W.: A Simple Approximate Method for Calculating Spanwise Lift Distributions and Aerodynamic Influence Coefficients at Subsonic Speeds. NACA TN 2751, 1952.

TABLE I  
GEOMETRIC PARAMETERS OF PLAN FORMS

Plan form	$\Lambda$ , deg	A	$\lambda$	Figure
111	-45	1.5	0	2
113	-45	1.5	.50	3
114	-45	1.5	1.00	4
121	-45	3.0	0	5
122	-45	3.0	.25	6
123	-45	3.0	.50	7
124	-45	3.0	1.00	8
133	-45	6.0	.50	9
211	-30	1.5	0	10
213	-30	1.5	.50	11
214	-30	1.5	1.00	12
221	-30	3.0	0	13
222	-30	3.0	.25	14
223	-30	3.0	.50	15
224	-30	3.0	1.00	16
231	-30	6.0	0	17
232	-30	6.0	.25	18
233	-30	6.0	.50	19
234	-30	6.0	1.00	20
311 to 344	0	See reference 1		
411	30	1.5	0	21
412	30	1.5	.25	22
413	30	1.5	.50	23
414	30	1.5	1.00	24
415	30	1.5	1.50	25
421	30	3.0	0	26
422	30	3.0	.25	27
423	30	3.0	.50	28
424	30	3.0	1.00	29
425	30	3.0	1.50	30
431	30	6.0	0	31
432	30	6.0	.25	32
433	30	6.0	.50	33
434	30	6.0	1.00	34
435	30	6.0	1.50	35
441	30	12.0	0	36
443	30	12.0	.50	37

TABLE I.- Concluded

## GEOMETRIC PARAMETERS OF PLAN FORMS

Plan form	$\Delta_j$ deg	A	$\lambda$	Figure
511	45	1.5	0	38
512	45	1.5	.25	39
513	45	1.5	.50	40
514	45	1.5	1.00	41
515	45	1.5	1.50	42
521	45	3.0	0	43
522	45	3.0	.25	44
523	45	3.0	.50	45
524	45	3.0	1.00	46
525	45	3.0	1.50	47
531	45	6.0	0	48
532	45	6.0	.25	49
533	45	6.0	.50	50
534	45	6.0	1.00	51
541	45	12.0	0	52
611	60	1.5	0	53
612	60	1.5	.25	54
613	60	1.5	.50	55
614	60	1.5	1.00	56
615	60	1.5	1.50	57
621	60	3.0	0	58
622	60	3.0	.25	59
623	60	3.0	.50	60
624	60	3.0	1.00	61
631	60	6.0	0	62

TABLE II

## FORCE AND MOMENT COEFFICIENTS FOR ANGLE-OF-ATTACK LOADINGS

Plan form	Additional loading				Damping-in-roll loading	
	$C_{L\alpha}$	$C_{EM}$	$\bar{y}^*$	$C_{D_1}$	$C_{l_d}$	$C_{L_{1/2}}$
111	1.64871	0.63258	0.38368	0.62777	0.11277	0.40239
113	1.85807	.76562	.41205	.73740	.13853	.47318
114	1.87569	.78408	.41802	.74780	.14144	.48134
121	2.42211	.87483	.36119	.73731	.17358	.64263
122	2.64357	1.03227	.39048	.77973	.22206	.77508
123	2.69454	1.08204	.40157	.78963	.23673	.81588
124	2.69043	1.11252	.41351	.77439	.24828	.84753
133	3.37812	1.33974	.39659	.63846	.34746	1.20486
211	1.76903	.69710	.39406	.69750	.12020	.42344
213	1.94394	.81123	.41731	.80348	.14090	.48000
214	1.94567	.82125	.42209	.80331	.14283	.48533
221	2.70036	1.01310	.37517	.86487	.19248	.69909
222	2.93175	1.17765	.40169	.63750	.23793	.82239
223	2.97252	1.22157	.41095	.94539	.24987	.85545
224	2.95065	1.24215	.42098	.92268	.25875	.87933
231	3.62802	1.28766	.35492	.85056	.27066	1.02066
232	3.87786	1.51704	.39121	.84030	.35628	1.24680
233	3.90762	1.58958	.40679	.82704	.38598	1.32540
234	3.84630	1.63416	.42487	.79134	.41112	1.38918
411	1.94963	.80456	.41267	.81311	.13116	.45239
412	2.00588	.84812	.42282	.85365	.14070	.47807
413	1.99173	.84872	.42612	.84167	.14210	.48171
414	1.94109	.83610	.43074	.80076	.14283	.48302
415	1.88573	.81975	.43471	.75812	.14291	.48245
421	3.01773	1.21773	.40353	.98994	.21456	.75159
422	3.12165	1.32624	.42485	1.03374	.24783	.83811
423	3.07014	1.32897	.43287	1.00308	.25464	.85488
424	2.92692	1.29864	.44369	.92385	.25878	.86253
425	2.79483	1.26357	.45211	.78405	.25989	.86235
431	3.95874	1.55052	.39167	.87882	.29904	1.06866
432	4.06464	1.73748	.42746	.87810	.37218	1.24710
433	3.98304	1.76646	.44350	.85662	.39444	1.29954
434	3.77202	1.74936	.46377	.80766	.41118	1.33356
435	3.58176	1.71222	.47804	.77202	.41682	1.33938

TABLE II - Concluded

## FORCE AND MOMENT COEFFICIENTS FOR ANGLE-OF-ATTACK LOADINGS

Plan form	Additional loading				Damping-in-roll loading	
	$C_{L\alpha}$	$C_{FM}$	$\bar{y}^*$	$C_{Di}$	$C_{l_d}$	$C_{L1/2}$
441	4.59360	1.74852	0.38064	0.61536	0.36660	1.33740
443	4.56228	2.06748	.45317	.57984	.52188	1.68636
511	1.93662	.80382	.41506	.79992	.13040	.44868
512	1.97370	.83958	.42538	.82643	.13407	.44750
513	1.94378	.83430	.42922	.80235	.14097	.47640
514	1.86579	.81219	.43531	.74255	.14144	.47633
515	1.79034	.78903	.44072	.68868	.14132	.47480
521	2.84253	1.15554	.40651	.87363	.20313	.70869
522	2.90250	1.25139	.43114	.89571	.23721	.79458
523	2.82432	1.24569	.44106	.85671	.24426	.81084
524	2.64909	1.20486	.45482	.77559	.24834	.81672
525	2.50140	1.16445	.46552	.71559	.24927	.81513
531	3.50310	1.38696	.39592	.68226	.26766	.95028
532	3.54030	1.54428	.43620	.67188	.33576	1.10910
533	3.44442	1.56882	.45547	.65946	.35838	1.15986
534	3.23712	1.55268	.47965	.63384	.37584	1.19388
541	3.88932	1.50732	.38755	.43596	.31608	1.14264
611	1.81259	.75411	.41604	.70028	.12291	.42260
612	1.82760	.78737	.43082	.70988	.11837	.33245
613	1.77234	.77418	.43681	.67097	.13614	.45573
614	1.65722	.73998	.44652	.59592	.13653	.45416
615	1.55931	.70947	.45499	.53913	.13617	.45080
621	2.36382	.96159	.40679	.60540	.24783	.83811
622	2.37666	1.04664	.44038	.60717	.20790	.68451
623	2.28954	1.04175	.45500	.58014	.21687	.70428
624	2.11944	1.00566	.47449	.53079	.22263	.71343
631	2.67384	1.06410	.39797	.40284	.21018	.74508

TABLE III

LIFT AND BENDING-MOMENT COEFFICIENTS FOR UNIT EFFECTIVE FLAP DEFLECTION

Plan form	$\frac{b_f}{b} = 0.1$		$\frac{b_f}{b} = 0.2$		$\frac{b_f}{b} = 0.3$		$\frac{b_f}{b} = 0.4$		$\frac{b_f}{b} = 0.5$		$\frac{b_f}{b} = 0.6$		$\frac{b_f}{b} = 0.7$		$\frac{b_f}{b} = 0.8$		$\frac{b_f}{b} = 0.9$	
	$C_L$	$C_{BM}$																
111	0.21522	0.05459	0.43004	0.11396	0.64085	0.17880	0.84943	0.24792	1.03155	0.32057	1.20650	0.39569	1.36334	0.47078	1.49654	0.54102	1.59750	0.60002
113	.22704	.06295	.45444	.13088	.68006	.20541	.89958	.28995	1.10951	.37148	1.30842	.46152	.55673	.65338	.64124	.78270	.71826	
114	.22656	.06430	.45419	.13350	.68105	.20987	.90275	.29264	1.11387	.38067	1.30754	.47331	.56696	.66856	.65747	.80050	.75599	
121	.38475	.06785	.65181	.14598	.97565	.22705	1.27758	.33156	1.55754	.43431	1.81395	.54251	2.03967	.69118	2.22597	.75171	2.36598	.88238
122	.38808	.07050	.64779	.15129	.97248	.24480	1.28526	.34878	1.57875	.46134	1.87445	.58586	2.11254	.71212	2.34294	.83976	2.53023	.95625
123	.31506	.07034	.63585	.15132	.95865	.24648	1.27303	.35552	1.57179	.47076	1.89994	.60021	2.12814	.73668	2.37393	.87561	2.57460	1.00128
124	.29883	.06729	.60681	.14673	.92022	.24189	1.23399	.35082	1.55718	.47190	1.82724	.60738	2.10384	.75111	2.35914	.89757	2.56683	1.02897
135	.38570	.06150	.78266	.14301	1.19220	.24156	1.58388	.37122	1.94490	.50910	2.29752	.66918	2.62602	.83384	2.94006	.1.03230	3.20484	1.21320
211	.29072	.06251	.46025	.12906	.68508	.20108	.90048	.27743	1.10312	.55726	1.29085	.43958	.52085	1.60250	.59706	1.71200	.66101	
213	.24201	.07041	.48326	.14540	.72120	.22634	.95151	.31277	1.17146	.40567	1.37861	.49820	1.56813	.59509	1.73502	.68418	1.86798	.76302
214	.24036	.07094	.48039	.14657	.71777	.22859	.94844	.31595	1.16865	.40820	1.37681	.50415	1.56743	.60042	1.73541	.69275	1.86924	.77255
221	.36285	.08455	.72979	.17820	1.06144	.28363	1.18183	.39486	1.73013	.51334	2.01579	.63673	2.25737	.75900	2.47653	.87258	2.62850	.96203
222	.36493	.08932	.73146	.18676	1.09355	.30013	1.44210	.42185	1.76973	.55191	2.07882	.69075	2.36058	.83892	2.61135	.97341	2.81379	1.09821
223	.35961	.08991	.72210	.19014	1.08321	.20345	1.43304	.42882	1.76469	.56299	2.08115	.70743	2.37394	.87040	2.63759	1.00561	2.84736	1.13793
224	.34485	.08745	.69322	.18609	1.04802	.29919	1.39320	.42516	1.72350	.56214	2.04251	.71118	2.35865	.86589	2.60712	1.02000	2.82350	1.15644
231	.51087	.09516	1.02672	.20934	1.53282	.34358	2.00172	.48978	2.42118	.64518	2.79882	.80886	3.11952	.97092	3.37740	1.11798	3.55188	1.23524
232	.48672	.09372	.98156	.20634	1.47342	.34128	1.97904	.49326	2.36454	.65796	2.76486	.83954	3.12504	1.02886	3.45048	1.22088	3.71262	1.39710
233	.46158	.08940	.92322	.19896	1.41228	.32328	1.86950	.48928	2.28514	.65776	2.70822	.83950	3.08088	1.04712	3.43586	1.25946	3.74948	1.45686
234	.41862	.08088	.85578	.18748	1.30602	.31284	1.74776	.46192	2.16180	.63574	2.57732	.83798	2.96790	1.05012	3.34194	1.27950	3.63250	1.49274
411	.23683	.07655	.51078	.15672	.75077	.24151	.99629	.33080	1.22009	.42308	1.42706	.51693	1.61162	.60564	1.76870	.69402	1.88802	.76490
412	.25941	.07922	.51618	.16220	.76698	.29001	1.00802	.34227	1.23572	.45799	1.44743	.55568	1.63850	.63225	1.80374	.72326	1.93356	.80129
413	.23700	.07890	.51141	.16158	.75993	.24914	.99878	.34119	1.22444	.43679	1.43453	.53451	1.62449	.63132	1.78926	.72288	1.91915	.80141
414	.24996	.07700	.49743	.15780	.73914	.24321	.97129	.33378	1.19048	.42768	1.39490	.58100	1.58010	.61968	1.74151	.71051	1.86873	.78863
415	.24259	.07472	.48342	.15329	.71568	.25681	.94141	.32493	1.15470	.41582	1.35284	.51140	1.53311	.60564	1.69053	.69542	1.81523	.77279
421	.42417	.11651	.84228	.23992	1.24677	.37143	1.68897	.51073	1.97973	.65448	2.23693	.80034	2.58999	.94032	2.79204	1.06794	2.94798	1.16805
422	.42060	.11967	.83601	.24681	1.23838	.38304	1.61940	.52704	1.97193	.67674	2.29712	.83061	2.58177	.98307	2.82672	1.12775	3.01572	1.25109
423	.40842	.11721	.81198	.24201	1.20367	.37611	1.57362	.51821	1.91736	.66607	2.27488	.82020	2.51963	.97479	2.97621	1.12248	3.22963	1.22028
424	.58208	.11016	.76020	.22818	1.12743	.32293	1.47773	.49242	1.80048	.63630	2.10402	.78726	2.37960	.94014	2.62256	1.08932	2.81484	1.21809
425	.23751	.10704	.71223	.21447	1.05849	.35618	1.38807	.46751	1.66693	.60675	1.98864	.75468	2.25585	.90258	2.49369	1.05518	2.68329	1.18266
431	.61665	.14682	1.22076	.30634	1.79364	.48114	2.51486	.66830	2.77110	.85584	3.16734	1.04718	3.48972	1.22646	3.73920	1.38474	3.89640	1.50012

TABLE III - Continued

LIFT AND BENDING-MOMENT COEFFICIENTS FOR UNIT INTEFFECTIVE FLAP DEFLECTION

Plan form	$\frac{b_f}{b} = 0.1$		$\frac{b_f}{b} = 0.2$		$\frac{b_f}{b} = 0.3$		$\frac{b_f}{b} = 0.4$		$\frac{b_f}{b} = 0.5$		$\frac{b_f}{b} = 0.6$		$\frac{b_f}{b} = 0.7$		$\frac{b_f}{b} = 0.8$		$\frac{b_f}{b} = 0.9$	
	$C_L$	$C_{BM}$																
432	0.5864	0.14556	1.16296	0.30322	1.71132	0.48090	2.21346	0.66846	2.66004	0.86406	3.06210	1.06788	3.41088	1.27092	3.70794	1.46538	3.93512	1.63254
433	.25122	.13842	1.09476	.29165	1.61508	.46194	2.09418	.64572	2.52504	.84000	2.92206	1.04670	3.27618	1.29734	3.58986	1.46536	3.83490	1.64874
434	.48792	.18284	.97440	.26260	1.44726	.42160	1.66698	.59654	2.29326	.76612	2.67604	.99894	3.05192	1.20918	3.55484	1.42722	3.61392	1.62294
435	.43542	.10986	.87612	.23760	1.51262	.38694	1.72614	.59440	2.10948	.73818	2.48892	.94308	2.85206	1.16034	3.15684	1.38816	3.41952	1.58824
441	.79092	.15444	1.56132	.33560	2.27520	.57784	2.89135	.75588	3.59324	.97620	3.81672	1.19868	4.14504	1.40256	4.39560	1.57896	4.53636	1.69932
443	.64308	.13068	1.28508	.28992	1.89912	.47964	2.44512	.68904	2.91144	.91164	3.34644	1.15608	3.75580	1.41012	4.09152	1.66632	4.37292	1.90476
511	.25818	.07767	.51294	.15878	.76121	.24441	.99912	.57432	1.22250	.42707	1.42636	.52110	1.61024	.61835	1.76445	.69690	1.87952	.76620
512	.25853	.07946	.51458	.15874	.76347	.25083	1.00220	.34215	1.22682	.43719	1.43451	.53382	1.62068	.62891	1.78035	.71614	1.90461	.79044
513	.25463	.07853	.50625	.16067	.75132	.24743	.98585	.55837	1.20632	.43251	1.41026	.52838	1.59336	1.62297	1.73101	.71208	1.87439	.78827
514	.24463	.07953	.48662	.15489	.72167	.23870	.94599	.38664	1.15643	.41785	1.35532	.51110	1.52681	.60356	1.67676	.69119	1.79852	.76650
515	.23487	.07257	.46662	.14871	.69155	.22957	.90579	.51419	1.10666	.40284	1.29327	.49513	1.46198	.58552	1.60886	.66963	1.72490	.74394
521	.41640	.11473	.83521	.23750	1.21791	.36468	1.58011	.50004	1.91814	.61852	2.21373	.77751	2.46168	.90873	2.69776	1.02954	2.78858	1.11465
522	.40809	.11667	.80904	.24006	1.19582	.37143	1.59513	.50919	1.88064	.61124	2.17590	.79990	2.43309	.93789	2.64886	1.07100	2.81220	1.18359
523	.39213	.11298	.77703	.23265	1.18579	.36030	1.48971	.59461	1.80393	.63593	2.09007	.77736	2.34524	.92010	2.56058	1.05630	2.78880	1.17369
524	.35970	.10395	.71265	.21477	1.05069	.33390	1.36638	.46035	1.63675	.59322	1.92588	.87348	2.15694	.87354	2.38242	1.01055	2.57111	1.13034
525	.33018	.09540	.65541	.19815	.96861	.30999	1.86282	.43011	1.57364	.57782	1.79232	.69360	2.02734	.85874	2.23680	.96927	2.40366	1.08959
531	.26458	.15878	1.15050	.28878	1.67664	.45072	2.14308	.62040	2.55562	.79170	2.87472	.96198	3.13950	1.11892	3.33852	1.23340	3.45816	1.54886
532	.24504	.13482	.107382	.28176	1.56678	.44166	2.00628	.61095	2.38788	.78498	2.72400	.96904	3.01176	1.14262	3.23404	1.31142	3.43452	1.49464
533	.50370	.12605	.99450	.26508	1.42206	.41828	1.86924	.58256	2.23562	.74562	2.56584	.93714	2.86026	1.12272	3.11952	1.30506	3.38148	1.46368
534	.43038	.10884	.84498	.22788	1.23678	.36306	1.60732	.51594	1.95984	.68670	2.29122	.87222	2.60034	1.06764	2.87592	1.26258	3.08880	1.43538
541	.71287	.12990	1.38616	.29800	2.13201	.50301	2.49644	.66496	2.93180	.86386	3.24505	1.03452	3.50183	1.20417	3.68976	1.34357	3.88569	1.45301
611	.27098	.07521	.49815	.15229	.73800	.23621	.96551	.58280	1.17886	.41162	1.37184	.50094	1.22843	.56608	1.67459	.66345	1.77047	.78435
612	.24872	.07628	.49389	.15996	.73248	.23987	.95706	.58739	1.16655	.41723	1.35993	.50798	1.32411	.59629	1.66415	.67811	1.77039	.74668
613	.24173	.07436	.47973	.15207	.70973	.23587	.92715	.51916	1.12829	.40660	1.31114	.49241	1.47834	.58221	1.60887	.66351	1.73407	.73265
614	.22700	.06986	.44969	.14289	.68547	.21972	.89413	.29987	1.04918	.37723	1.21823	.46693	1.36902	.53061	1.49887	.63003	1.60010	.69842
615	.21317	.06334	.42144	.13406	.62036	.20624	.80697	.28182	.97871	.36041	1.13751	.44153	1.28067	.52281	1.40523	.60069	1.50351	.66821
621	.37323	.10135	.74844	.20826	1.09647	.32173	1.41240	.43908	1.68798	.37704	1.92210	.67281	2.10834	.77822	2.24718	.87000	2.33259	.93486
622	.36593	.10135	.71694	.20829	1.04777	.32183	1.34624	.43836	1.60905	.35740	1.85879	.67737	2.05543	.79389	2.19333	.90204	2.31165	.99249
623	.34311	.09660	.67473	.19824	.98403	.30627	1.26333	.41850	1.51085	.53418	1.73211	.65310	1.95549	.77148	2.09024	.88446	2.21712	.98181
624	.30228	.08341	.59520	.17687	.86976	.27471	1.11990	.37878	1.34553	.43843	1.55403	.60447	1.74267	.72306	1.90947	.82919	2.04180	.94151
631	.32896	.11595	.94817	.22358	1.43329	.37118	1.68975	.47528	2.01236	.62458	2.22669	.74271	2.43464	.87882	2.57715	.96427	2.63573	1.03539

TABLE IV

LIFF AND BOLLING-MOMENT COEFFICIENTS FOR UNIT EFFECTIVE ALERSON DEFLECTION

Plan form	$\frac{b_{all}}{b} = 1.0$		$\frac{b_{all}}{b} = 0.9$		$\frac{b_{all}}{b} = 0.8$		$\frac{b_{all}}{b} = 0.7$		$\frac{b_{all}}{b} = 0.6$		$\frac{b_{all}}{b} = 0.5$		$\frac{b_{all}}{b} = 0.4$		$\frac{b_{all}}{b} = 0.3$		$\frac{b_{all}}{b} = 0.2$		$\frac{b_{all}}{b} = 0.1$	
	$c_{L1/2}$	$c_t$																		
111	0.79394	0.19406	0.76296	0.19109	0.69695	0.18221	0.60924	0.16769	0.51002	0.14807	0.40476	0.12405	0.29892	0.09668	0.19838	0.06767	0.10875	0.03911	0.03719	0.01412
113	0.90355	0.23265	0.86365	0.22956	0.80056	0.21974	0.70392	0.20552	0.60359	0.18131	0.46512	0.15372	0.36744	0.12189	0.25091	0.08712	0.14204	0.05193	0.05276	0.02001
114	0.91647	0.25816	0.88339	0.25450	0.81437	0.22672	0.78105	0.20804	0.61250	0.18518	0.49461	0.15681	0.37374	0.12408	0.25193	0.08856	0.14214	0.05268	0.05346	0.02027
121	1.31211	0.30327	1.25484	0.29953	1.13520	0.28422	0.98187	0.26073	0.81072	0.22905	0.63253	0.19029	0.56287	0.16223	0.29139	0.10085	0.15850	0.05607	0.04888	0.01867
122	1.49070	0.36823	1.43319	0.36356	1.31247	0.34854	1.15605	0.32388	0.97027	0.28985	0.70924	0.24741	0.59760	0.19797	0.41076	0.14392	0.23730	0.08727	0.08931	0.03490
123	1.55127	0.39018	1.49979	0.38983	1.37280	0.37017	1.21194	0.34468	1.03371	0.30963	0.80877	0.26511	0.58846	0.21264	0.44088	0.15423	0.23410	0.09342	0.09498	0.03697
124	1.59976	0.40412	1.54173	1.42157	1.36799	0.36253	1.07617	0.30559	0.86213	0.27877	0.66888	0.22866	0.46089	0.16170	0.26508	0.09741	0.09858	0.03789		
125	2.30398	0.79968	2.29974	0.55332	2.01966	0.53370	1.78008	0.30004	1.51134	0.45240	1.22874	0.39162	0.94278	0.31908	0.65664	0.23698	0.39030	0.14704	0.15138	0.06050
211	0.85052	0.20664	0.78386	0.20346	0.73055	0.19400	0.64023	0.17853	0.57118	0.15767	0.42744	0.13217	0.31676	0.10514	0.21102	0.07233	0.11659	0.04197	0.04046	0.01536
213	0.91695	0.23004	0.88448	0.23459	0.81359	0.22423	0.71933	0.20733	0.61008	0.18428	0.49222	0.15587	0.37119	0.12320	0.25936	0.08787	0.14396	0.05228	0.05301	0.02010
214	0.98651	0.24152	0.89388	0.23799	0.82451	0.22749	0.72744	0.21027	0.61712	0.18563	0.49787	0.15794	0.37553	0.12476	0.25904	0.08892	0.14452	0.05283	0.05297	0.02031
221	1.41459	0.59606	1.35501	0.53069	1.22886	0.51470	1.06617	0.28860	0.88326	0.59350	0.61195	0.21075	0.40258	0.16494	0.26522	0.11181	0.17322	0.06297	0.06110	0.02169
222	1.58662	0.59873	1.52841	0.59512	1.39789	0.57629	1.23018	0.34860	0.105979	0.31074	0.86664	0.26291	0.62093	0.20982	0.43107	0.15093	0.24690	0.09081	0.09152	0.03549
223	1.65599	0.41712	1.57560	1.41142	1.44678	0.39423	1.27794	0.36482	0.10814	0.32876	0.87606	0.27807	0.65318	0.22146	0.45335	0.15936	0.26037	0.09666	0.09735	0.03720
224	1.67847	0.43116	1.61823	0.42940	1.48558	0.40800	1.31355	0.37899	0.111717	0.33885	0.94747	0.26851	0.62089	0.22971	0.46998	0.16706	0.26598	0.09888	0.09963	0.03821
231	2.16894	0.48452	2.06178	0.47532	1.84398	0.45090	1.37164	0.41112	1.27488	0.37784	0.97416	0.29358	0.68628	0.22188	0.48882	0.14874	0.22708	0.08076	0.08438	0.02574
232	2.45282	0.59246	2.34725	0.58446	2.15222	0.56004	1.86690	0.51934	1.55582	0.46410	1.24734	0.49954	0.97768	0.31514	0.64158	0.22996	0.37122	0.14052	0.14172	0.05661
233	2.53312	0.62623	2.44672	0.61634	2.29698	0.60036	1.96818	0.55980	1.66682	0.50354	1.34784	0.42224	1.02954	0.34894	0.71022	0.25506	0.41400	0.15672	0.15756	0.06270
234	2.62752	0.66530	2.52684	0.65868	2.32134	0.63716	2.05618	0.59490	1.75722	1.42370	1.46416	1.09968	0.37294	0.76900	0.27546	0.44592	0.16072	0.16866	0.06690	
411	0.88895	0.22593	0.80423	0.22242	0.77880	0.21197	0.68411	0.19496	0.57501	0.17202	0.45831	0.14407	0.34028	0.11230	0.22686	0.07859	0.12498	0.04553	0.04350	0.01568
412	.91943	0.2948	0.8647	0.29966	0.81489	0.22111	0.71820	0.20760	0.60719	0.18593	0.48789	0.15900	0.36684	0.12201	0.24825	0.08664	0.14045	0.05130	0.05142	0.01965
413	0.92469	0.31162	0.81189	0.29798	0.81953	0.22718	0.72965	0.20977	0.61188	0.18576	0.49206	0.15662	0.36984	0.12393	0.25104	0.08769	0.14226	0.05198	0.05217	0.01994
414	0.92658	0.31270	0.89377	0.29906	0.81261	0.22823	0.78494	0.21057	0.61355	0.18671	0.49367	0.15747	0.37150	0.18410	0.25224	0.08826	0.14309	0.05234	0.05253	0.02009
415	0.92956	0.24263	0.89258	0.29918	0.82037	0.22835	0.78419	0.21071	0.61301	0.18684	0.49364	0.15768	0.37116	0.18423	0.25226	0.08838	0.14315	0.05243	0.05258	0.02018
421	1.52861	0.77967	1.46529	0.77326	1.32954	0.55453	1.15623	0.32367	0.95172	0.20259	0.74156	0.20334	0.55461	0.17838	0.34272	0.12129	0.17617	0.06699	0.06710	0.02273
422	1.64580	0.42491	1.56157	0.41892	1.44448	0.39861	1.26396	0.36669	1.05903	0.32562	0.8436	0.27180	0.62592	0.21303	0.41983	0.15060	0.23529	0.08883	0.08947	0.03396
423	1.66704	0.45446	1.60341	0.42777	1.46528	0.40797	1.28974	0.37778	1.08511	0.33255	0.86510	0.27933	0.64167	0.22020	0.43527	0.15649	0.24273	0.09273	0.09394	0.03761
424	1.67337	0.43980	1.60998	0.43511	1.47327	0.41534	1.29435	0.38118	1.05053	0.33792	0.87414	0.26512	0.65262	0.22491	0.44469	0.16020	0.25221	0.09293	0.09270	0.03669
425	1.66863	0.44073	1.60554	0.43410	1.46598	0.41442	1.29822	0.38847	1.05062	0.33992	0.87525	0.26671	0.65305	0.22472	0.44782	0.16195	0.25425	0.09615	0.09597	0.03705
426	2.32896	0.55158	2.21104	0.54090	1.96206	0.50964	1.66158	0.49984	1.32888	0.39462	0.99636	0.31806	0.68616	0.25568	0.42544	0.15360	0.20028	0.07980	0.08604	0.03418

TABLE IV - Continued.

## LIFT AND ROLLING-MOMENT COEFFICIENTS FOR UNIT EFFECTIVE AILERON DEFLECTION

Plan form	$\frac{b_{ail}}{b} = 1.0$		$\frac{b_{ail}}{b} = 0.9$		$\frac{b_{ail}}{b} = 0.8$		$\frac{b_{ail}}{b} = 0.7$		$\frac{b_{ail}}{b} = 0.6$		$\frac{b_{ail}}{b} = 0.5$		$\frac{b_{ail}}{b} = 0.4$		$\frac{b_{ail}}{b} = 0.3$		$\frac{b_{ail}}{b} = 0.2$		$\frac{b_{ail}}{b} = 0.1$	
	$C_{L1/2}$	$C_L$																		
432	2.75270	0.64686	2.42258	0.63594	2.19210	0.60384	1.88380	0.55854	1.55166	0.48492	1.21246	0.40426	0.88620	0.31494	0.58662	0.22164	0.36516	0.13062	0.11862	0.05028
433	2.61078	0.67354	2.49444	0.66468	2.25342	0.63828	1.93108	0.58134	1.63048	0.53342	1.26190	0.43182	0.93094	0.34038	0.24228	0.36246	0.14466	0.13280	0.05620	
434	2.63382	0.69528	2.51922	0.68124	2.28584	0.65204	1.99044	0.60270	1.66890	0.53556	1.33494	0.43365	1.00138	0.36000	0.68262	0.28860	0.39036	0.15546	0.14502	0.06066
435	2.62008	0.69972	2.50728	0.68916	2.27736	0.64844	1.95272	0.60934	1.68034	0.54506	1.35276	0.46218	1.08114	0.36815	0.65930	0.26523	0.40146	0.15981	0.14946	0.06840
441	3.16092	0.70300	2.95308	0.68992	2.54858	0.64260	2.07732	0.57132	1.60188	0.46208	1.25548	0.37896	0.76320	0.27300	0.44304	0.17184	0.20280	0.08520	0.05295	0.02400
443	3.52044	0.85440	3.30180	0.87780	2.93832	0.85116	2.70260	0.76428	2.05944	0.67536	1.62036	0.56932	1.20012	0.47096	0.81492	0.32496	0.46956	0.19776	0.17822	0.07944
511	0.87939	0.22545	0.86662	0.22391	0.77502	0.21140	0.68009	0.19428	0.37069	0.17120	0.45373	0.14309	0.25567	0.11130	0.22247	0.07728	0.18174	0.04452	0.04142	0.01604
512	0.91535	0.23075	0.88375	0.23010	0.81006	0.22431	0.71393	0.20675	0.60285	0.18303	0.48557	0.15405	0.36228	0.12108	0.24489	0.08583	0.18111	0.05070	0.05036	0.01937
513	0.91789	0.24012	0.88449	0.25649	0.81219	0.22568	0.71801	0.20607	0.60492	0.18428	0.48553	0.15522	0.36422	0.12212	0.24662	0.08897	0.18958	0.05129	0.05097	0.01964
514	0.91671	0.24072	0.88776	0.23707	0.81159	0.22628	0.72599	0.20887	0.60477	0.18578	0.48758	0.15581	0.36470	0.12267	0.24728	0.08745	0.18001	0.05163	0.05130	0.01980
515	0.91374	0.24048	0.88083	0.23685	0.80880	0.22607	0.73115	0.20849	0.60276	0.18476	0.48432	0.15975	0.36380	0.12269	0.24686	0.08721	0.15989	0.05171	0.05132	0.01983
521	1.46907	0.36471	1.40610	0.35832	1.27083	0.33942	1.09473	0.30894	0.89622	0.26823	0.69000	0.21997	0.48948	0.16390	0.30651	0.11082	0.15793	0.05952	0.04566	0.01902
522	1.58169	0.41025	1.51827	0.40562	1.38162	0.38403	1.20324	0.35238	1.00052	0.31002	0.79041	0.25896	0.58188	0.20178	0.38514	0.14159	0.21118	0.08395	0.07692	0.03144
523	1.60032	0.41902	1.50699	0.41265	1.40061	0.39521	1.22274	0.36158	1.02174	0.31867	0.81102	0.26745	0.60177	0.20958	0.40562	0.14265	0.22644	0.08757	0.08244	0.03571
524	1.60077	0.42042	1.51780	0.41747	1.40271	0.39785	1.22713	0.36203	0.81119	0.27276	0.61341	0.24747	0.41457	0.15287	0.25443	0.09066	0.08598	0.03466		
525	1.59919	0.48486	1.58904	0.47772	1.39590	0.50634	1.22226	0.36708	1.02741	0.32026	0.82250	0.27455	0.61629	0.21645	0.42799	0.15426	0.27718	0.09180	0.08724	0.03537
531	2.13978	0.50308	2.02756	0.49428	1.78266	0.46392	1.48342	0.41538	1.16772	0.32368	0.87794	0.28038	0.57725	0.20418	0.34002	0.13014	0.18622	0.06558	0.04194	0.01884
532	2.37058	0.52339	2.21265	0.51614	1.97610	0.50032	1.68120	0.50032	1.36658	0.45656	1.04338	0.36120	0.76135	0.27906	0.49836	0.19476	0.27458	0.11388	0.09906	0.04362
533	2.38104	0.52048	2.23660	0.50792	2.03082	0.51768	1.74316	0.53944	1.12470	0.46542	0.82025	0.36926	0.52440	0.21672	0.31260	0.12906	0.11508	0.05010		
534	2.14284	0.57372	2.39992	0.56490	1.83018	0.54038	1.59778	0.50510	1.32628	0.45282	1.08516	0.37874	0.61774	0.31002	0.56070	0.22434	0.32316	0.12584	0.12042	0.05288
541	2.83125	0.63840	2.61711	0.61308	2.22310	0.56183	1.76063	0.48970	1.36296	0.41505	0.94219	0.31805	0.65372	0.29773	0.37774	0.15001	0.17738	0.07616	0.05913	0.02715
611	0.84590	0.21554	0.81131	0.21204	0.74024	0.20165	0.64622	0.18476	0.53819	0.16800	0.42927	0.13439	0.30823	0.10758	0.19943	0.07076	0.10492	0.05955	0.05903	0.01331
612	0.89153	0.22837	0.85668	0.22877	0.78660	0.21809	0.69140	0.20070	0.58149	0.17786	0.46398	0.14871	0.34552	0.11637	0.23163	0.08208	0.18951	0.04612	0.04685	0.01884
613	0.86671	0.23319	0.85592	0.22961	0.78227	0.21893	0.68727	0.20154	0.57798	0.17813	0.46135	0.14960	0.34373	0.11789	0.23106	0.08201	0.18960	0.04885	0.04704	0.01892
614	0.88802	0.23382	0.84933	0.22967	0.77799	0.21903	0.68597	0.20171	0.57521	0.17861	0.45984	0.15003	0.34359	0.11787	0.23192	0.08597	0.18077	0.04943	0.04776	0.01892
615	0.87569	0.25247	0.84312	0.22892	0.77213	0.21851	0.67835	0.20111	0.57104	0.17796	0.45704	0.14979	0.34214	0.11784	0.23145	0.08397	0.18085	0.04956	0.04791	0.01901
621	1.64171	0.42940	1.58105	0.41613	1.44125	0.36112	1.25499	0.33920	1.06520	0.32186	0.84921	0.26941	0.63815	0.21296	0.41939	0.14884	0.25185	0.09323	0.10219	0.03966
622	1.40721	0.36576	1.34923	0.35946	1.21305	0.34083	1.04289	0.31092	0.84652	0.27144	0.66279	0.22458	0.47934	0.17313	0.31269	0.18034	0.17052	0.06960	0.06042	0.02613
623	1.45857	0.37565	1.36497	0.37095	1.23560	0.35193	1.06512	0.32025	0.87909	0.26657	0.68297	0.23562	0.50792	0.18397	0.33603	0.19915	0.18708	0.07293	0.06760	0.02901
624	1.43584	0.36862	1.36464	0.37625	1.23598	0.35799	1.07166	0.30865	0.89149	0.26989	0.70047	0.24399	0.52488	0.19122	0.32557	0.19581	0.19950	0.06664	0.07326	0.03108
631	1.73196	0.41392	1.67537	0.40143	1.43696	0.37329	1.16566	0.38861	0.91341	0.29132	0.64436	0.20073	0.42206	0.15706	0.24029	0.09525	0.11387	0.04914	0.05119	0.02465

TABLE V  
AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$

Plan form 111

0.0541	0.0164	0.0136	0.0021	0.0093	-0.0002	0.0083	-0.0004
0.0219	0.1364	0.0740	0.0340	0.0293	0.0193	0.0208	0.0079
0.0114	0.0656	0.2398	0.1344	0.0798	0.0636	0.0527	0.0253
0.0087	0.0387	0.1278	0.3439	0.2083	0.1384	0.1201	0.0538
0.0070	0.0320	0.0848	0.1995	0.4555	0.2930	0.2200	0.1045
0.0064	0.0274	0.0743	0.1446	0.2880	0.5739	0.4027	0.1714
0.0060	0.0262	0.0671	0.1327	0.2263	0.3982	0.7185	0.2988
0.0060	0.0253	0.0667	0.1261	0.2211	0.3449	0.5960	0.5519

Plan form 113

0.0633	0.0572	0.0448	0.0393	0.0313	0.0266	0.0227	0.0109
0.0293	0.1559	0.1154	0.0850	0.0710	0.0569	0.0502	0.0231
0.0164	0.0812	0.2509	0.1710	0.1221	0.1015	0.0846	0.0404
0.0123	0.0506	0.1398	0.3423	0.2253	0.1622	0.1397	0.0635
0.0096	0.0407	0.0944	0.2030	0.4311	0.2857	0.2160	0.1024
0.0086	0.0344	0.0809	0.1479	0.2741	0.5247	0.3666	0.1555
0.0079	0.0325	0.0729	0.1347	0.2159	0.3648	0.6423	0.2662
0.0078	0.0315	0.0721	0.1283	0.2108	0.3169	0.5332	0.4906

Plan form 114

0.0630	0.0577	0.0467	0.0429	0.0360	0.0314	0.0269	0.0128
0.0295	0.1561	0.1182	0.0910	0.0793	0.0654	0.0577	0.0265
0.0167	0.0822	0.2527	0.1767	0.1312	0.1116	0.0935	0.0444
0.0125	0.0516	0.1418	0.3450	0.2317	0.1701	0.1467	0.0665
0.0097	0.0411	0.0954	0.2044	0.4317	0.2878	0.2172	0.1024
0.0085	0.0343	0.0806	0.1474	0.2724	0.5194	0.3598	0.1514
0.0078	0.0321	0.0720	0.1330	0.2127	0.3582	0.6292	0.2589
0.0078	0.0310	0.0712	0.1264	0.2073	0.3103	0.5206	0.4809

Plan form 121

0.0284	-0.0051	0.0097	-0.0068	0.0082	-0.0066	0.0078	-0.0033
0.0098	0.0719	0.0246	0.0082	0.0058	0.0039	0.0035	0.0015
0.0042	0.0302	0.1326	0.0535	0.0227	0.0152	0.0121	0.0052
0.0031	0.0149	0.0623	0.1933	0.0909	0.0437	0.0353	0.0140
0.0023	0.0118	0.0360	0.0994	0.2575	0.1343	0.0805	0.0367
0.0021	0.0096	0.0309	0.0654	0.1478	0.3268	0.1976	0.0756
0.0020	0.0095	0.0276	0.0603	0.1105	0.2139	0.4194	0.1653
0.0020	0.0092	0.0281	0.0571	0.1092	0.1808	0.3406	0.3403

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_S]$  - Continued

## Plan form 122

0.0429	0.0336	0.0181	0.0116	0.0066	0.0051	0.0037	0.0018
0.0182	0.0993	0.0581	0.0280	0.0184	0.0114	0.0097	0.0039
0.0089	0.0462	0.1508	0.0784	0.0378	0.0262	0.0181	0.0086
0.0062	0.0253	0.0742	0.1983	0.1006	0.0520	0.0393	0.0160
0.0045	0.0190	0.0442	0.1037	0.2461	0.1299	0.0764	0.0345
0.0039	0.0154	0.0366	0.0683	0.1402	0.3002	0.1764	0.0662
0.0036	0.0148	0.0327	0.0622	0.1042	0.1945	0.3764	0.1462
0.0037	0.0144	0.0330	0.0592	0.1030	0.1644	0.3047	0.3068

## Plan form 123

0.0428	0.0361	0.0235	0.0163	0.0100	0.0072	0.0052	0.0024
0.0188	0.1017	0.0661	0.0373	0.0248	0.0156	0.0124	0.0051
0.0096	0.0489	0.1562	0.0885	0.0465	0.0317	0.0215	0.0100
0.0066	0.0272	0.0784	0.2034	0.1078	0.0571	0.0420	0.0169
0.0047	0.0202	0.0469	0.1068	0.2464	0.1305	0.0754	0.0335
0.0040	0.0160	0.0379	0.0697	0.1391	0.2932	0.1682	0.0616
0.0037	0.0151	0.0334	0.0626	0.1022	0.1874	0.3611	0.1378
0.0038	0.0148	0.0337	0.0596	0.1009	0.1579	0.2910	0.2956

## Plan form 124

0.0433	0.0378	0.0270	0.0207	0.0134	0.0095	0.0066	0.0030
0.0194	0.1043	0.0721	0.0455	0.0315	0.0201	0.0150	0.0061
0.0102	0.0513	0.1622	0.0981	0.0558	0.0377	0.0249	0.0111
0.0070	0.0290	0.0828	0.2110	0.1164	0.0631	0.0445	0.0174
0.0049	0.0212	0.0493	0.1110	0.2511	0.1329	0.0742	0.0320
0.0041	0.0162	0.0386	0.0707	0.1390	0.2897	0.1592	0.0557
0.0036	0.0150	0.0331	0.0619	0.0993	0.1799	0.3460	0.1275
0.0037	0.0146	0.0334	0.0589	0.0981	0.1505	0.2759	0.2856

## Plan form 133

0.0330	0.0238	0.0100	0.0053	0.0020	0.0017	0.0008	0.0005
0.0133	0.0731	0.0359	0.0119	0.0065	0.0028	0.0025	0.0008
0.0058	0.0310	0.1044	0.0412	0.0127	0.0072	0.0039	0.0018
0.0035	0.0143	0.0448	0.1290	0.0456	0.0144	0.0090	0.0031
0.0021	0.0095	0.0215	0.0565	0.1509	0.0524	0.0188	0.0077
0.0017	0.0065	0.0157	0.0291	0.0696	0.1738	0.0662	0.0175
0.0014	0.0060	0.0126	0.0249	0.0422	0.0928	0.2103	0.0649
0.0015	0.0060	0.0136	0.0239	0.0437	0.0740	0.1614	0.1945

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 211

0.0537	0.0258	0.0174	0.0099	0.0121	0.0066	0.0106	0.0028
0.0223	0.1356	0.0822	0.0477	0.0416	0.0324	0.0324	0.0143
0.0118	0.0668	0.2346	0.1440	0.0968	0.0824	0.0722	0.0352
0.0091	0.0404	0.1276	0.3356	0.2158	0.1559	0.1409	0.0652
0.0073	0.0334	0.0857	0.1977	0.4417	0.2962	0.2328	0.1126
0.0066	0.0285	0.0745	0.1442	0.2318	0.5528	0.3974	0.1721
0.0062	0.0271	0.0672	0.1318	0.2222	0.3861	0.6879	0.2887
0.0062	0.0262	0.0667	0.1253	0.2169	0.3356	0.5725	0.5240

Plan form 213

0.0607	0.0554	0.0445	0.0409	0.0350	0.0317	0.0286	0.0140
0.0283	0.1502	0.1133	0.0872	0.0772	0.0664	0.0615	0.0292
0.0160	0.0790	0.2433	0.1706	0.1286	0.1134	0.1001	0.0489
0.0121	0.0498	0.1371	0.3342	0.2276	0.1732	0.1565	0.0732
0.0095	0.0400	0.0931	0.1999	0.4225	0.2897	0.2294	0.1109
0.0084	0.0337	0.0794	0.1457	0.2700	0.5146	0.3695	0.1599
0.0078	0.0315	0.0710	0.1318	0.2124	0.3588	0.6291	0.2635
0.0077	0.0305	0.0702	0.1253	0.2067	0.3120	0.5233	0.4772

Plan form 214

0.0608	0.0561	0.0461	0.0435	0.0382	0.0351	0.0318	0.0155
0.0286	0.1513	0.1159	0.0915	0.0829	0.0724	0.0672	0.0318
0.0163	0.0802	0.2460	0.1752	0.1350	0.1203	0.1066	0.0519
0.0123	0.0507	0.1392	0.3376	0.2325	0.1785	0.1613	0.0753
0.0096	0.0405	0.0941	0.2014	0.4244	0.2913	0.2298	0.1108
0.0084	0.0336	0.0791	0.1452	0.2688	0.5117	0.3646	0.1569
0.0076	0.0311	0.0700	0.1299	0.2091	0.3530	0.6201	0.2582
0.0075	0.0300	0.0689	0.1229	0.2028	0.3053	0.5131	0.4710

Plan form 221

0.0279	0.0029	0.0075	-0.0014	0.0058	-0.0021	0.0054	-0.0011
0.0098	0.0716	0.0318	0.0140	0.0113	0.0080	0.0079	0.0033
0.0044	0.0308	0.1284	0.0623	0.0330	0.0255	0.0209	0.0099
0.0032	0.0160	0.0620	0.1859	0.0994	0.0585	0.0497	0.0216
0.0024	0.0127	0.0371	0.0984	0.2461	0.1420	0.0967	0.0454
0.0022	0.0103	0.0314	0.0658	0.1440	0.3104	0.2003	0.0810
0.0020	0.0100	0.0278	0.0598	0.1078	0.2046	0.3936	0.1586
0.0020	0.0095	0.0280	0.0564	0.1059	0.1736	0.3207	0.3142

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 222

0.0390	0.0320	0.0202	0.0150	0.0103	0.0085	0.0070	0.0034
0.0169	0.0918	0.0585	0.0343	0.0256	0.0187	0.0164	0.0074
0.0085	0.0437	0.1418	0.0821	0.0481	0.0371	0.0292	0.0140
0.0059	0.0245	0.0716	0.1889	0.1069	0.0658	0.0541	0.0238
0.0043	0.0186	0.0437	0.1015	0.2358	0.1374	0.0927	0.0433
0.0037	0.0150	0.0360	0.0679	0.1372	0.2873	0.1823	0.0730
0.0034	0.0141	0.0316	0.0607	0.1020	0.1875	0.3571	0.1425
0.0035	0.0137	0.0316	0.0575	0.0999	0.1587	0.2897	0.2857

Plan form 223

0.0390	0.0337	0.0238	0.0188	0.0134	0.0108	0.0088	0.0042
0.0174	0.0936	0.0641	0.0413	0.0313	0.0229	0.0196	0.0088
0.0090	0.0458	0.1459	0.0894	0.0552	0.0423	0.0329	0.0156
0.0063	0.0261	0.0749	0.1928	0.1122	0.0700	0.0567	0.0247
0.0046	0.0195	0.0457	0.1038	0.2362	0.1378	0.0920	0.0426
0.0039	0.0154	0.0369	0.0686	0.1361	0.2820	0.1760	0.0695
0.0035	0.0143	0.0320	0.0606	0.0998	0.1815	0.3454	0.1362
0.0035	0.0138	0.0318	0.0571	0.0975	0.1528	0.2786	0.2771

Plan form 224

0.0396	0.0351	0.0263	0.0219	0.0163	0.0130	0.0103	0.0048
0.0180	0.0962	0.0685	0.0470	0.0367	0.0270	0.0224	0.0099
0.0095	0.0480	0.1511	0.0964	0.0621	0.0475	0.0362	0.0168
0.0067	0.0276	0.0786	0.1992	0.1188	0.0747	0.0591	0.0254
0.0048	0.0203	0.0476	0.1071	0.2404	0.1397	0.0910	0.0414
0.0039	0.0156	0.0373	0.0691	0.1358	0.2800	0.1694	0.0651
0.0034	0.0140	0.0315	0.0594	0.0968	0.1751	0.3344	0.1287
0.0034	0.0134	0.0311	0.0555	0.0938	0.1453	0.2658	0.2699

Plan form 231

0.0148	-0.0059	0.0071	-0.0058	0.0062	-0.0055	0.0058	-0.0027
0.0040	0.0394	0.0076	0.0044	0.0011	0.0028	0.0004	0.0012
0.0013	0.0138	0.0731	0.0220	0.0095	0.0054	0.0055	0.0018
0.0009	0.0054	0.0294	0.1082	0.0408	0.0177	0.0136	0.0056
0.0006	0.0041	0.0139	0.0479	0.1446	0.0627	0.0327	0.0148
0.0005	0.0030	0.0113	0.0266	0.0719	0.1828	0.0941	0.0325
0.0005	0.0030	0.0095	0.0238	0.0476	0.1069	0.2351	0.0862
0.0005	0.0028	0.0100	0.0221	0.0478	0.0864	0.1843	0.2036

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_S]$  - Continued

Plan form 232

0.0281	0.0190	0.0081	0.0051	0.0026	0.0023	0.0015	0.0008
0.0108	0.0610	0.0294	0.0118	0.0074	0.0047	0.0039	0.0017
0.0045	0.0250	0.0888	0.0376	0.0154	0.0103	0.0071	0.0033
0.0028	0.0115	0.0379	0.1145	0.0473	0.0208	0.0151	0.0061
0.0018	0.0079	0.0188	0.0514	0.1403	0.0606	0.0303	0.0135
0.0014	0.0057	0.0143	0.0283	0.0681	0.1684	0.0822	0.0274
0.0013	0.0053	0.0118	0.0244	0.0438	0.0950	0.2095	0.0741
0.0013	0.0052	0.0122	0.0228	0.0437	0.0758	0.1617	0.1836

Plan form 233

0.0288	0.0221	0.0118	0.0074	0.0040	0.0030	0.0020	0.0010
0.0118	0.0652	0.0364	0.0166	0.0104	0.0060	0.0050	0.0020
0.0053	0.0282	0.0954	0.0450	0.0193	0.0126	0.0081	0.0038
0.0033	0.0134	0.0420	0.1200	0.0520	0.0227	0.0160	0.0062
0.0020	0.0090	0.0210	0.0541	0.1418	0.0608	0.0292	0.0128
0.0016	0.0062	0.0154	0.0292	0.0676	0.1645	0.0767	0.0246
0.0013	0.0056	0.0123	0.0244	0.0420	0.0896	0.1990	0.0678
0.0013	0.0054	0.0126	0.0227	0.0418	0.0705	0.1511	0.1760

Plan form 234

0.0297	0.0244	0.0149	0.0100	0.0056	0.0038	0.0025	0.0011
0.0127	0.0692	0.0425	0.0220	0.0136	0.0077	0.0058	0.0022
0.0059	0.0312	0.1028	0.0528	0.0242	0.0150	0.0090	0.0041
0.0037	0.0153	0.0465	0.1279	0.0581	0.0251	0.0167	0.0061
0.0023	0.0100	0.0233	0.0579	0.1466	0.0621	0.0278	0.0118
0.0016	0.0066	0.0162	0.0301	0.0678	0.1629	0.0705	0.0209
0.0013	0.0056	0.0123	0.0239	0.0396	0.0836	0.1878	0.0595
0.0013	0.0054	0.0125	0.0220	0.0390	0.0637	0.1377	0.1681

Plan form 411

0.0521	0.0420	0.0306	0.0304	0.0266	0.0274	0.0253	0.0134
0.0215	0.1350	0.0963	0.0739	0.0692	0.0642	0.0632	0.0311
0.0113	0.0671	0.2279	0.1586	0.1236	0.1164	0.1093	0.0549
0.0086	0.0407	0.1252	0.3245	0.2256	0.1809	0.1724	0.0831
0.0067	0.0328	0.0837	0.1928	0.4221	0.2996	0.2491	0.1232
0.0059	0.0274	0.0712	0.1397	0.2704	0.5242	0.3896	0.1727
0.0054	0.0257	0.0634	0.1261	0.2126	0.3678	0.6470	0.2752
0.0054	0.0248	0.0625	0.1195	0.2066	0.3203	0.5404	0.4876

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 412

0.0587	0.0535	0.0436	0.0417	0.0382	0.0372	0.0360	0.0181
0.0272	0.1450	0.1103	0.0879	0.0827	0.0766	0.0754	0.0370
0.0152	0.0756	0.2357	0.1687	0.1341	0.1260	0.1187	0.0595
0.0112	0.0468	0.1317	0.3259	0.2294	0.1850	0.1764	0.0850
0.0086	0.0369	0.0879	0.1938	0.4159	0.2959	0.2464	0.1217
0.0074	0.0303	0.0734	0.1390	0.2646	0.5099	0.3785	0.1677
0.0066	0.0278	0.0644	0.1237	0.2058	0.3548	0.6255	0.2657
0.0065	0.0266	0.0630	0.1166	0.1990	0.3074	0.5204	0.4714

Plan form 413

0.0593	0.0546	0.0450	0.0434	0.0398	0.0388	0.0374	0.0188
0.0278	0.1473	0.1130	0.0908	0.0855	0.0791	0.0779	0.0382
0.0156	0.0775	0.2395	0.1724	0.1374	0.1290	0.1215	0.0608
0.0116	0.0481	0.1343	0.3300	0.2324	0.1873	0.1784	0.0860
0.0088	0.0376	0.0890	0.1952	0.4182	0.2967	0.2465	0.1218
0.0074	0.0303	0.0732	0.1382	0.2634	0.5093	0.3764	0.1664
0.0065	0.0273	0.0631	0.1212	0.2018	0.3502	0.6221	0.2635
0.0063	0.0258	0.0612	0.1130	0.1936	0.3009	0.5144	0.4697

Plan form 414

0.0609	0.0563	0.0467	0.0450	0.0412	0.0399	0.0384	0.0193
0.0286	0.1516	0.1167	0.0939	0.0881	0.0812	0.0797	0.0391
0.0162	0.0800	0.2466	0.1775	0.1410	0.1317	0.1236	0.0618
0.0121	0.0496	0.1380	0.3383	0.2371	0.1897	0.1801	0.0868
0.0090	0.0382	0.0903	0.1980	0.4251	0.2988	0.2466	0.1217
0.0074	0.0300	0.0724	0.1367	0.2623	0.5122	0.3748	0.1650
0.0063	0.0262	0.0603	0.1162	0.1947	0.3434	0.6204	0.2613
0.0061	0.0243	0.0574	0.1059	0.1833	0.2886	0.5052	0.4706

Plan form 415

0.0628	0.0580	0.0480	0.0461	0.0420	0.0404	0.0388	0.0195
0.0295	0.1561	0.1201	0.0963	0.0898	0.0822	0.0804	0.0393
0.0167	0.0823	0.2535	0.1819	0.1436	0.1331	0.1243	0.0622
0.0123	0.0509	0.1413	0.3467	0.2413	0.1913	0.1808	0.0869
0.0091	0.0387	0.0914	0.2009	0.4329	0.3011	0.2463	0.1214
0.0073	0.0296	0.0717	0.1356	0.2622	0.5168	0.3739	0.1638
0.0060	0.0251	0.0578	0.1118	0.1884	0.3373	0.6204	0.2597
0.0056	0.0226	0.0536	0.0992	0.1732	0.2759	0.4957	0.4719

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 421

0.0260	0.0192	0.0100	0.0124	0.0076	0.0108	0.0070	0.0053
0.0078	0.0720	0.0449	0.0301	0.0276	0.0244	0.0243	0.0117
0.0030	0.0286	0.1241	0.0770	0.0539	0.0496	0.0452	0.0230
0.0022	0.0139	0.0573	0.1789	0.1124	0.0830	0.0778	0.0371
0.0015	0.0103	0.0322	0.0924	0.2344	0.1530	0.1201	0.0593
0.0013	0.0079	0.0255	0.0585	0.1341	0.2933	0.2050	0.0883
0.0011	0.0072	0.0212	0.0502	0.0959	0.1896	0.3676	0.1525
0.0011	0.0067	0.0208	0.0460	0.0918	0.1580	0.2972	0.2889

Plan form 422

0.0118	0.0101	0.0074	0.0066	0.0056	0.0053	0.0051	0.0025
0.0051	0.0280	0.0195	0.0140	0.0124	0.0109	0.0107	0.0052
0.0024	0.0130	0.0438	0.0284	0.0204	0.0184	0.0168	0.0084
0.0015	0.0067	0.0213	0.0588	0.0374	0.0276	0.0258	0.0123
0.0010	0.0047	0.0119	0.0303	0.0736	0.0478	0.0373	0.0184
0.0008	0.0034	0.0090	0.0186	0.0411	0.0895	0.0619	0.0265
0.0007	0.0029	0.0072	0.0153	0.0283	0.0561	0.1107	0.0456
0.0006	0.0027	0.0069	0.0138	0.0266	0.0456	0.0880	0.0874

Plan form 423

0.0379	0.0333	0.0253	0.0225	0.0191	0.0178	0.0167	0.0084
0.0168	0.0912	0.0652	0.0474	0.0416	0.0362	0.0350	0.0170
0.0084	0.0438	0.1429	0.0939	0.0675	0.0599	0.0545	0.0273
0.0055	0.0233	0.0708	0.1897	0.1207	0.0883	0.0817	0.0388
0.0035	0.0158	0.0393	0.0973	0.2332	0.1495	0.1155	0.0569
0.0027	0.0110	0.0285	0.0578	0.1269	0.2785	0.1897	0.0807
0.0021	0.0092	0.0219	0.0459	0.0837	0.1685	0.3400	0.1390
0.0020	0.0082	0.0206	0.0401	0.0769	0.1331	0.2649	0.2700

Plan form 424

0.0400	0.0356	0.0275	0.0246	0.0205	0.0187	0.0173	0.0086
0.0180	0.0970	0.0702	0.0515	0.0446	0.0379	0.0360	0.0175
0.0093	0.0476	0.1523	0.1008	0.0717	0.0623	0.0556	0.0278
0.0061	0.0257	0.0763	0.2007	0.1267	0.0905	0.0822	0.0389
0.0039	0.0170	0.0418	0.1016	0.2420	0.1514	0.1140	0.0559
0.0027	0.0112	0.0287	0.0574	0.1262	0.2812	0.1857	0.0779
0.0020	0.0087	0.0205	0.0425	0.0770	0.1593	0.3349	0.1346
0.0019	0.0074	0.0184	0.0351	0.0674	0.1175	0.2487	0.2678

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 425

0.0419	0.0375	0.0291	0.0259	0.0215	0.0191	0.0173	0.0086
0.0190	0.1019	0.0742	0.0543	0.0465	0.0387	0.0361	0.0174
0.0099	0.0503	0.1603	0.1060	0.0747	0.0636	0.0555	0.0276
0.0065	0.0273	0.0805	0.2104	0.1316	0.0920	0.0819	0.0384
0.0040	0.0178	0.0436	0.1054	0.2507	0.1535	0.1123	0.0547
0.0028	0.0113	0.0288	0.0572	0.1266	0.2854	0.1828	0.0753
0.0020	0.0083	0.0193	0.0400	0.0720	0.1524	0.3313	0.1306
0.0018	0.0067	0.0165	0.0311	0.0599	0.1044	0.2334	0.2652

Plan form 431

0.0132	0.0092	0.0010	0.0058	-0.0001	0.0051	-0.0003	0.0025
0.0018	0.0400	0.0211	0.0095	0.0105	0.0065	0.0089	0.0031
0.0004	0.0097	0.0717	0.0370	0.0201	0.0189	0.0153	0.0085
0.0004	0.0030	0.0228	0.1055	0.0556	0.0341	0.0319	0.0145
0.0002	0.0022	0.0087	0.0400	0.1397	0.0777	0.0537	0.0268
0.0002	0.0013	0.0064	0.0185	0.0618	0.1758	0.1085	0.0438
0.0001	0.0013	0.0045	0.0146	0.0346	0.0928	0.2235	0.0881
0.0002	0.0011	0.0045	0.0120	0.0319	0.0673	0.1651	0.1891

Plan form 432

0.0270	0.0205	0.0126	0.0100	0.0075	0.0067	0.0062	0.0031
0.0097	0.0593	0.0354	0.0208	0.0169	0.0133	0.0129	0.0062
0.0033	0.0211	0.0869	0.0475	0.0278	0.0234	0.0199	0.0103
0.0017	0.0076	0.0316	0.1126	0.0599	0.0364	0.0330	0.0151
0.0009	0.0044	0.0123	0.0432	0.1380	0.0749	0.0503	0.0250
0.0006	0.0026	0.0080	0.0189	0.0581	0.1654	0.0986	0.0390
0.0005	0.0022	0.0054	0.0139	0.0298	0.0808	0.2044	0.0790
0.0005	0.0018	0.0051	0.0108	0.0265	0.0544	0.1435	0.1745

Plan form 433

0.0283	0.0228	0.0149	0.0118	0.0087	0.0075	0.0066	0.0034
0.0112	0.0644	0.0405	0.0247	0.0194	0.0149	0.0140	0.0067
0.0043	0.0254	0.0946	0.0531	0.0314	0.0253	0.0211	0.0107
0.0022	0.0097	0.0363	0.1194	0.0635	0.0379	0.0333	0.0152
0.0011	0.0053	0.0142	0.0460	0.1414	0.0750	0.0487	0.0241
0.0007	0.0029	0.0086	0.0191	0.0571	0.1637	0.0942	0.0364
0.0005	0.0023	0.0054	0.0131	0.0270	0.0745	0.1967	0.0743
0.0005	0.0018	0.0049	0.0097	0.0231	0.0464	0.1306	0.1687

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 434

0.0304	0.0254	0.0174	0.0138	0.0100	0.0082	0.0069	0.0034
0.0127	0.0706	0.0462	0.0290	0.0221	0.0163	0.0144	0.0068
0.0054	0.0299	0.1048	0.0603	0.0356	0.0273	0.0217	0.0108
0.0028	0.0121	0.0423	0.1304	0.0692	0.0399	0.0331	0.0148
0.0014	0.0064	0.0165	0.0503	0.1493	0.0763	0.0465	0.0225
0.0008	0.0032	0.0091	0.0195	0.0567	0.1652	0.0890	0.0327
0.0005	0.0022	0.0051	0.0120	0.0235	0.0665	0.1881	0.0678
0.0004	0.0016	0.0043	0.0080	0.0186	0.0355	0.1112	0.1605

Plan form 435

0.0321	0.0272	0.0189	0.0151	0.0108	0.0084	0.0067	0.0033
0.0136	0.0752	0.0500	0.0316	0.0239	0.0169	0.0143	0.0065
0.0059	0.0327	0.1124	0.0653	0.0383	0.0283	0.0214	0.0103
0.0031	0.0136	0.0463	0.1393	0.0735	0.0410	0.0324	0.0140
0.0014	0.0070	0.0179	0.0535	0.1566	0.0777	0.0446	0.0209
0.0008	0.0033	0.0093	0.0195	0.0566	0.1676	0.0853	0.0296
0.0004	0.0021	0.0048	0.0111	0.0210	0.0612	0.1828	0.0625
0.0003	0.0014	0.0038	0.0067	0.0154	0.0282	0.0959	0.1534

Plan form 441

0.0066	0.0049	-0.0019	0.0037	-0.0022	0.0034	-0.0023	0.0016
0.0001	0.0225	0.0107	0.0006	0.0052	-0.0004	0.0045	-0.0001
0.0001	0.0015	0.0426	0.0183	0.0049	0.0075	0.0027	0.0033
0.0000	0.0005	0.0062	0.0647	0.0276	0.0107	0.0122	0.0041
0.0000	0.0003	0.0015	0.0136	0.0872	0.0387	0.0195	0.0108
0.0000	0.0001	0.0013	0.0039	0.0239	0.1098	0.0552	0.0187
0.0000	0.0002	0.0006	0.0032	0.0085	0.0386	0.1387	0.0493
0.0000	0.0000	0.0009	0.0019	0.0081	0.0196	0.0817	0.1280

Plan form 443

0.0233	0.0161	0.0083	0.0057	0.0035	0.0027	0.0022	0.0011
0.0071	0.0477	0.0246	0.0113	0.0080	0.0050	0.0047	0.0020
0.0017	0.0126	0.0646	0.0291	0.0122	0.0095	0.0061	0.0035
0.0006	0.0029	0.0153	0.0780	0.0329	0.0134	0.0119	0.0044
0.0002	0.0013	0.0037	0.0178	0.0902	0.0374	0.0165	0.0088
0.0001	0.0006	0.0020	0.0046	0.0214	0.1020	0.0456	0.0135
0.0001	0.0005	0.0010	0.0030	0.0061	0.0276	0.1176	0.0380
0.0001	0.0003	0.0010	0.0015	0.0055	0.0103	0.0545	0.1075

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

## Plan form 511

0.0991	0.0861	0.0612	0.0658	0.0547	0.0609	0.0529	0.0301
0.0390	0.2623	0.1892	0.1489	0.1405	0.1332	0.1312	0.0653
0.0193	0.1268	0.4420	0.3110	0.2454	0.2343	0.2214	0.1118
0.0143	0.0744	0.2384	0.6302	0.4408	0.3573	0.3428	0.1660
0.0109	0.0588	0.1558	0.3698	0.8199	0.5852	0.4893	0.2427
0.0096	0.0483	0.1305	0.2640	0.5206	1.0190	0.7594	0.3374
0.0087	0.0447	0.1146	0.2358	0.4053	0.7110	1.2582	0.5357
0.0086	0.0428	0.1126	0.2223	0.3925	0.6170	1.0486	0.9489

## Plan form 512

0.0595	0.0542	0.0442	0.0425	0.0394	0.0388	0.0378	0.0190
0.0274	0.1468	0.1115	0.0892	0.0846	0.0792	0.0788	0.0387
0.0150	0.0756	0.2380	0.1704	0.1363	0.1293	0.1229	0.0617
0.0108	0.0456	0.1309	0.3285	0.2316	0.1880	0.1807	0.0874
0.0080	0.0349	0.0850	0.1921	0.4189	0.2987	0.2501	0.1239
0.0067	0.0278	0.0692	0.1345	0.2627	0.5137	0.3820	0.1695
0.0058	0.0250	0.0592	0.1175	0.2006	0.3535	0.6305	0.2678
0.0057	0.0236	0.0574	0.1093	0.1924	0.3038	0.5221	0.4761

## Plan form 513

0.0607	0.0556	0.0457	0.0440	0.0406	0.0399	0.0389	0.0196
0.0282	0.1502	0.1148	0.0920	0.0870	0.0813	0.0807	0.0397
0.0156	0.0781	0.2435	0.1746	0.1394	0.1318	0.1252	0.0629
0.0113	0.0473	0.1342	0.3343	0.2350	0.1902	0.1826	0.0883
0.0082	0.0357	0.0862	0.1939	0.4228	0.3000	0.2504	0.1241
0.0067	0.0277	0.0685	0.1329	0.2609	0.5146	0.3807	0.1685
0.0058	0.0242	0.0570	0.1132	0.1946	0.3480	0.6289	0.2664
0.0056	0.0225	0.0545	0.1036	0.1842	0.2948	0.5159	0.4764

## Plan form 514

0.0633	0.0582	0.0478	0.0458	0.0419	0.0408	0.0396	0.0200
0.0296	0.1569	0.1199	0.0957	0.0896	0.0830	0.0822	0.0405
0.0165	0.0818	0.2539	0.1812	0.1431	0.1342	0.1270	0.0639
0.0119	0.0494	0.1394	0.3464	0.2410	0.1927	0.1844	0.0892
0.0085	0.0365	0.0879	0.1976	0.4332	0.3031	0.2509	0.1244
0.0066	0.0271	0.0671	0.1302	0.2593	0.5204	0.3802	0.1675
0.0053	0.0224	0.0528	0.1055	0.1836	0.3385	0.6300	0.2651
0.0049	0.0200	0.0486	0.0925	0.1678	0.2761	0.5045	0.4801

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 515

0.0660	0.0606	0.0497	0.0473	0.0428	0.0412	0.0399	0.0201
0.0308	0.1634	0.1246	0.0988	0.0916	0.0838	0.0827	0.0407
0.0171	0.0851	0.2640	0.1872	0.1462	0.1355	0.1275	0.0642
0.0123	0.0511	0.1442	0.3585	0.2466	0.1943	0.1849	0.0894
0.0086	0.0373	0.0894	0.2016	0.4443	0.3060	0.2505	0.1243
0.0064	0.0266	0.0661	0.1286	0.2588	0.5272	0.3798	0.1665
0.0049	0.0210	0.0494	0.0993	0.1742	0.3296	0.6312	0.2639
0.0044	0.0179	0.0437	0.0831	0.1528	0.2565	0.4906	0.4832

Plan form 521

0.0251	0.0222	0.0090	0.0152	0.0067	0.0138	0.0064	0.0069
0.0059	0.0725	0.0467	0.0307	0.0296	0.0256	0.0270	0.0126
0.0017	0.0250	0.1262	0.0787	0.0553	0.0521	0.0480	0.0247
0.0012	0.0101	0.0528	0.1829	0.1149	0.0857	0.0817	0.0392
0.0007	0.0071	0.0260	0.0879	0.2406	0.1572	0.1246	0.0619
0.0006	0.0050	0.0195	0.0508	0.1306	0.3025	0.2119	0.0915
0.0005	0.0045	0.0152	0.0416	0.0879	0.1887	0.3810	0.1581
0.0005	0.0040	0.0147	0.0367	0.0822	0.1527	0.3035	0.3016

Plan form 522

0.0394	0.0334	0.0244	0.0217	0.0187	0.0179	0.0174	0.0088
0.0164	0.0926	0.0639	0.0456	0.0407	0.0363	0.0362	0.0178
0.0071	0.0405	0.1429	0.0917	0.0657	0.0600	0.0560	0.0284
0.0041	0.0185	0.0646	0.1902	0.1199	0.0888	0.0843	0.0405
0.0024	0.0116	0.0319	0.0910	0.2372	0.1529	0.1204	0.0599
0.0017	0.0075	0.0220	0.0499	0.1236	0.2886	0.1994	0.0856
0.0013	0.0062	0.0161	0.0383	0.0778	0.1712	0.3584	0.1477
0.0013	0.0054	0.0150	0.0325	0.0703	0.1325	0.2778	0.2859

Plan form 523

0.0410	0.0356	0.0267	0.0237	0.0200	0.0188	0.0181	0.0092
0.0178	0.0979	0.0690	0.0495	0.0434	0.0381	0.0376	0.0185
0.0083	0.0451	0.1516	0.0981	0.0697	0.0624	0.0578	0.0293
0.0049	0.0215	0.0705	0.1988	0.1245	0.0907	0.0854	0.0410
0.0027	0.0131	0.0345	0.0944	0.2422	0.1533	0.1191	0.0593
0.0019	0.0080	0.0225	0.0493	0.1216	0.2881	0.1954	0.0834
0.0013	0.0062	0.0155	0.0357	0.0715	0.1622	0.3526	0.1442
0.0012	0.0051	0.0139	0.0289	0.0622	0.1189	0.2645	0.2835

TABLE V.- Continued  
AERODYNAMIC INFLUENCE-COEFFICIENT MATRICES  
(a) Symmetric loadings  $[Q_S]$  - Continued

Plan form 524

0.0440	0.0388	0.0295	0.0260	0.0215	0.0195	0.0183	0.0093
0.0196	0.1059	0.0756	0.0544	0.0466	0.0394	0.0381	0.0188
0.0096	0.0504	0.1647	0.1068	0.0746	0.0645	0.0583	0.0296
0.0058	0.0249	0.0782	0.2141	0.1320	0.0928	0.0854	0.0409
0.0032	0.0147	0.0377	0.1002	0.2545	0.1555	0.1167	0.0581
0.0020	0.0083	0.0228	0.0485	0.1205	0.2922	0.1905	0.0800
0.0013	0.0058	0.0140	0.0318	0.0626	0.1493	0.3465	0.1391
0.0011	0.0044	0.0117	0.0232	0.0505	0.0970	0.2411	0.2811

Plan form 525

0.0467	0.0413	0.0315	0.0277	0.0225	0.0199	0.0181	0.0092
0.0209	0.1127	0.0808	0.0580	0.0489	0.0402	0.0378	0.0184
0.0104	0.0541	0.1755	0.1137	0.0783	0.0658	0.0577	0.0291
0.0063	0.0271	0.0839	0.2271	0.1385	0.0944	0.0845	0.0400
0.0034	0.0157	0.0401	0.1053	0.2663	0.1581	0.1142	0.0564
0.0020	0.0084	0.0230	0.0483	0.1210	0.2980	0.1866	0.0767
0.0012	0.0054	0.0129	0.0291	0.0566	0.1399	0.3418	0.1338
0.0009	0.0037	0.0100	0.0192	0.0422	0.0802	0.2189	0.2767

Plan form 531

0.0125	0.0123	-0.0001	0.0079	-0.0014	0.0071	-0.0017	0.0035
0.0006	0.0402	0.0244	0.0083	0.0126	0.0053	0.0112	0.0027
0.0001	0.0064	0.0739	0.0399	0.0196	0.0206	0.0153	0.0097
0.0001	0.0013	0.0179	0.1100	0.0585	0.0343	0.0342	0.0153
0.0000	0.0011	0.0048	0.0341	0.1467	0.0811	0.0557	0.0287
0.0000	0.0005	0.0036	0.0119	0.0554	0.1855	0.1145	0.0463
0.0000	0.0006	0.0020	0.0089	0.0251	0.0865	0.2377	0.0940
0.0000	0.0003	0.0022	0.0063	0.0220	0.0549	0.1650	0.2048

Plan form 532

0.0306	0.0228	0.0138	0.0109	0.0082	0.0073	0.0069	0.0036
0.0099	0.0654	0.0384	0.0221	0.0180	0.0141	0.0142	0.0069
0.0025	0.0196	0.0936	0.0506	0.0285	0.0245	0.0207	0.0112
0.0010	0.0051	0.0280	0.1200	0.0630	0.0368	0.0347	0.0159
0.0004	0.0026	0.0079	0.0380	0.1466	0.0782	0.0516	0.0266
0.0003	0.0012	0.0047	0.0123	0.0516	0.1752	0.1037	0.0408
0.0002	0.0011	0.0025	0.0083	0.0203	0.0730	0.2169	0.0841
0.0002	0.0007	0.0025	0.0053	0.0171	0.0403	0.1390	0.1888

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 533

0.0325	0.0258	0.0165	0.0130	0.0094	0.0081	0.0073	0.0038
0.0122	0.0725	0.0447	0.0267	0.0208	0.0158	0.0152	0.0074
0.0038	0.0254	0.1042	0.0572	0.0328	0.0264	0.0222	0.0116
0.0016	0.0074	0.0340	0.1291	0.0672	0.0385	0.0347	0.0159
0.0006	0.0034	0.0098	0.0413	0.1512	0.0782	0.0494	0.0252
0.0003	0.0015	0.0052	0.0126	0.0504	0.1736	0.0984	0.0376
0.0002	0.0011	0.0026	0.0078	0.0176	0.0654	0.2075	0.0784
0.0002	0.0007	0.0025	0.0045	0.0142	0.0315	0.1222	0.1809

Plan form 534

0.0352	0.0290	0.0194	0.0153	0.0108	0.0087	0.0074	0.0037
0.0142	0.0806	0.0518	0.0317	0.0239	0.0172	0.0154	0.0073
0.0052	0.0314	0.1175	0.0659	0.0378	0.0285	0.0226	0.0114
0.0023	0.0102	0.0415	0.1432	0.0738	0.0407	0.0340	0.0152
0.0008	0.0044	0.0121	0.0463	0.1611	0.0797	0.0465	0.0230
0.0005	0.0018	0.0057	0.0129	0.0498	0.1754	0.0921	0.0328
0.0002	0.0011	0.0025	0.0070	0.0145	0.0560	0.1963	0.0700
0.0002	0.0006	0.0021	0.0033	0.0106	0.0208	0.0972	0.1683

Plan form 541

0.0062	0.0074	-0.0028	0.0049	-0.0031	0.0044	-0.0032	0.0019
-0.0006	0.0219	0.0145	-0.0009	0.0073	-0.0020	0.0064	-0.0007
0.0002	-0.0004	0.0431	0.0226	0.0032	0.0097	0.0010	0.0042
-0.0000	0.0005	0.0024	0.0671	0.0320	0.0093	0.0144	0.0038
0.0000	0.0000	0.0008	0.0083	0.0919	0.0430	0.0186	0.0120
0.0000	0.0000	0.0006	0.0017	0.0174	0.1165	0.0599	0.0191
-0.0000	0.0001	0.0002	0.0016	0.0041	0.0306	0.1469	0.0529
0.0000	-0.0000	0.0005	0.0004	0.0045	0.0101	0.0726	0.1376

Plan form 611

0.0489	0.0473	0.0287	0.0370	0.0260	0.0353	0.0258	0.0176
0.0158	0.1367	0.0978	0.0770	0.0733	0.0706	0.0698	0.0350
0.0060	0.0586	0.2324	0.1620	0.1280	0.1235	0.1178	0.0596
0.0041	0.0295	0.1159	0.3336	0.2317	0.1884	0.1820	0.0884
0.0028	0.0215	0.0686	0.1856	0.4366	0.3104	0.2598	0.1292
0.0024	0.0164	0.0541	0.1243	0.2674	0.5458	0.4053	0.1798
0.0020	0.0147	0.0451	0.1068	0.2004	0.3722	0.6770	0.2875
0.0020	0.0136	0.0437	0.0982	0.1913	0.3179	0.5590	0.5144

TABLE V.- Continued  
AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_S]$  - Continued

Plan form 612

0.0639	0.0573	0.0458	0.0439	0.0407	0.0407	0.0401	0.0203
0.0287	0.1558	0.1162	0.0917	0.0873	0.0827	0.0832	0.0411
0.0145	0.0766	0.2494	0.1755	0.1395	0.1338	0.1284	0.0648
0.0094	0.0416	0.1291	0.3409	0.2372	0.1927	0.1869	0.0907
0.0060	0.0285	0.0753	0.1873	0.4330	0.3064	0.2567	0.1276
0.0046	0.0202	0.0559	0.1197	0.2573	0.5320	0.3935	0.1741
0.0037	0.0170	0.0439	0.0976	0.1840	0.3522	0.6557	0.2775
0.0035	0.0153	0.0412	0.0867	0.1709	0.2933	0.5337	0.5000

Plan form 613

0.0662	0.0598	0.0481	0.0456	0.0418	0.0415	0.0410	0.0208
0.0302	0.1622	0.1215	0.0953	0.0896	0.0843	0.0849	0.0420
0.0159	0.0814	0.2596	0.1819	0.1430	0.1362	0.1308	0.0661
0.0104	0.0451	0.1354	0.3517	0.2422	0.1951	0.1893	0.0919
0.0066	0.0303	0.0778	0.1904	0.4404	0.3083	0.2574	0.1282
0.0047	0.0205	0.0550	0.1165	0.2537	0.5348	0.3926	0.1733
0.0036	0.0163	0.0409	0.0901	0.1720	0.3419	0.6558	0.2764
0.0033	0.0141	0.0371	0.0769	0.1546	0.2751	0.5239	0.5030

Plan form 614

0.0709	0.0643	0.0516	0.0483	0.0433	0.0421	0.0415	0.0211
0.0326	0.1742	0.1303	0.1009	0.0928	0.0854	0.0859	0.0427
0.0174	0.0880	0.2780	0.1929	0.1480	0.1381	0.1321	0.0672
0.0116	0.0493	0.1450	0.3731	0.2515	0.1973	0.1909	0.0930
0.0071	0.0322	0.0813	0.1973	0.4584	0.3121	0.2573	0.1288
0.0048	0.0201	0.0535	0.1124	0.2502	0.5442	0.3918	0.1723
0.0033	0.0145	0.0357	0.0790	0.1526	0.3230	0.6582	0.2756
0.0028	0.0115	0.0302	0.0618	0.1274	0.2381	0.5009	0.5109

Plan form 615

0.0754	0.0684	0.0547	0.0507	0.0445	0.0423	0.0413	0.0212
0.0347	0.1852	0.1382	0.1059	0.0957	0.0858	0.0857	0.0428
0.0185	0.0936	0.2950	0.2030	0.1527	0.1390	0.1315	0.0673
0.0124	0.0524	0.1533	0.3935	0.2605	0.1986	0.1902	0.0931
0.0075	0.0337	0.0845	0.2046	0.4770	0.3156	0.2552	0.1285
0.0047	0.0199	0.0529	0.1104	0.2497	0.5542	0.3896	0.1707
0.0029	0.0132	0.0322	0.0713	0.1384	0.3060	0.6580	0.2736
0.0022	0.0095	0.0252	0.0507	0.1070	0.2032	0.4718	0.5155

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Continued

Plan form 621

0.0239	0.0261	0.0055	0.0178	0.0029	0.0166	0.0029	0.0085
0.0029	0.0738	0.0498	0.0265	0.0305	0.0220	0.0290	0.0114
0.0002	0.0172	0.1328	0.0808	0.0523	0.0518	0.0470	0.0254
0.0003	0.0037	0.0419	0.1954	0.1182	0.0852	0.0839	0.0402
0.0000	0.0027	0.0133	0.0756	0.2600	0.1644	0.1299	0.0653
0.0001	0.0013	0.0089	0.0320	0.1198	0.3308	0.2282	0.0982
0.0000	0.0013	0.0056	0.0233	0.0654	0.1843	0.4236	0.1747
0.0001	0.0009	0.0055	0.0181	0.0570	0.1344	0.3218	0.3439

Plan form 622

0.0474	0.0389	0.0270	0.0234	0.0195	0.0188	0.0187	0.0097
0.0181	0.1081	0.0714	0.0483	0.0421	0.0373	0.0384	0.0192
0.0056	0.0398	0.1613	0.0982	0.0667	0.0606	0.0576	0.0299
0.0025	0.0123	0.0593	0.2098	0.1250	0.0887	0.0862	0.0419
0.0010	0.0061	0.0198	0.0813	0.2585	0.1586	0.1232	0.0625
0.0006	0.0029	0.0113	0.0313	0.1109	0.3140	0.2115	0.0906
0.0003	0.0023	0.0063	0.0205	0.0525	0.1588	0.3946	0.1617
0.0003	0.0016	0.0058	0.0144	0.0431	0.1036	0.2831	0.3255

Plan form 623

0.0500	0.0424	0.0303	0.0260	0.0211	0.0196	0.0192	0.0100
0.0207	0.1169	0.0793	0.0540	0.0458	0.0392	0.0397	0.0200
0.0079	0.0481	0.1758	0.1081	0.0724	0.0635	0.0595	0.0311
0.0036	0.0168	0.0689	0.2240	0.1318	0.0910	0.0868	0.0425
0.0014	0.0079	0.0233	0.0867	0.2668	0.1586	0.1203	0.0614
0.0008	0.0034	0.0121	0.0309	0.1082	0.3129	0.2046	0.0870
0.0004	0.0024	0.0061	0.0184	0.0449	0.1443	0.3843	0.1561
0.0004	0.0015	0.0052	0.0116	0.0348	0.0829	0.2586	0.3209

Plan form 624

0.0546	0.0471	0.0344	0.0292	0.0230	0.0202	0.0189	0.0099
0.0235	0.1293	0.0892	0.0610	0.0501	0.0406	0.0394	0.0197
0.0102	0.0570	0.1960	0.1214	0.0796	0.0662	0.0591	0.0307
0.0049	0.0221	0.0811	0.2473	0.1432	0.0937	0.0856	0.0415
0.0019	0.0099	0.0278	0.0954	0.2853	0.1614	0.1153	0.0584
0.0010	0.0039	0.0128	0.0306	0.1070	0.3184	0.1953	0.0806
0.0004	0.0023	0.0054	0.0156	0.0358	0.1257	0.3711	0.1461
0.0003	0.0012	0.0042	0.0078	0.0248	0.0555	0.2176	0.3106

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(a) Symmetric loadings  $[Q_s]$  - Concluded

Plan form 631

0.0119	0.0159	-0.0022	0.0098	-0.0036	0.0087	-0.0041	0.0043
-0.0007	0.0404	0.0298	0.0043	0.0152	0.0011	0.0140	0.0011
0.0001	0.0015	0.0782	0.0456	0.0151	0.0220	0.0108	0.0106
0.0000	0.0003	0.0095	0.1198	0.0640	0.0298	0.0354	0.0139
-0.0000	0.0003	0.0011	0.0228	0.1623	0.0865	0.0527	0.0300
0.0000	0.0000	0.0013	0.0036	0.0418	0.2061	0.1233	0.0480
-0.0000	0.0002	0.0002	0.0033	0.0102	0.0700	0.2665	0.1053
0.0000	-0.0000	0.0008	0.0009	0.0095	0.0285	0.1564	0.2405

(b) Antisymmetric loadings  $[Q_a]$ 

Plan form 111

0.7895	0.2427	0.1793	0.0346	0.0825	0.0034	0.0251
0.3170	1.9802	1.0382	0.4338	0.3056	0.1404	0.0766
0.1569	0.9189	3.4050	1.7805	0.8727	0.5081	0.2099
0.1085	0.4863	1.6633	4.6593	2.4336	1.1581	0.5325
0.0700	0.3308	0.8937	2.2667	5.6063	2.7052	1.0354
0.0449	0.1950	0.5527	1.1299	2.5528	5.9327	2.2616
0.0211	0.0962	0.2516	0.5391	0.9877	2.1671	5.1766

Plan form 113

0.8439	0.7454	0.5521	0.4430	0.2948	0.1828	0.0804
0.3820	2.0437	1.4441	0.9628	0.6819	0.3944	0.1834
0.2009	1.0108	3.1943	1.9954	1.1910	0.7326	0.3173
0.1358	0.5616	1.6128	4.1398	2.3264	1.2093	0.5619
0.0869	0.3733	0.8861	2.0502	4.7614	2.3564	0.9195
0.0548	0.2215	0.5427	1.0380	2.1868	4.9093	1.8756
0.0258	0.1080	0.2487	0.4941	0.8541	1.8003	4.2289

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 114

0.8290	0.7401	0.5636	0.4718	0.3325	0.2134	0.0961
0.3780	2.0172	1.4502	1.0050	0.7440	0.4489	0.2118
0.2005	1.0052	3.1639	2.0176	1.2512	0.7937	0.3512
0.1358	0.5612	1.6056	4.1017	2.3449	1.2503	0.5879
0.0866	0.3721	0.8830	2.0355	4.7018	2.3463	0.9223
0.0544	0.2202	0.5390	1.0302	2.1598	4.8247	1.8428
0.0256	0.1071	0.2467	0.4896	0.8438	1.7694	4.1428

Plan form 121

0.3950	-0.0641	0.1168	-0.0668	0.0648	-0.0355	0.0212
0.1369	1.0016	0.3364	0.1021	0.0605	0.0258	0.0124
0.0575	0.4151	1.8294	0.7120	0.2516	0.1283	0.0466
0.0396	0.1924	0.8208	2.6120	1.1110	0.3962	0.1704
0.0250	0.1322	0.4098	1.1991	3.2768	1.3761	0.4323
0.0165	0.0771	0.2573	0.5753	1.4475	3.6210	1.2838
0.0078	0.0392	0.1165	0.2787	0.5480	1.3084	3.2835

Plan form 122

0.5105	0.3962	0.2084	0.1239	0.0597	0.0332	0.0117
0.2151	1.1742	0.6731	0.3035	0.1715	0.0756	0.0333
0.1028	0.5345	1.7617	0.8750	0.3660	0.1902	0.0661
0.0667	0.2740	0.8234	2.2618	1.0403	0.4042	0.1660
0.0415	0.1794	0.4256	1.0544	2.6554	1.1331	0.3558
0.0264	0.1059	0.2614	0.5134	1.1746	2.8485	0.9965
0.0125	0.0526	0.1196	0.2473	0.4474	1.0297	2.5599

Plan form 123

0.4868	0.4066	0.2566	0.1679	0.0882	0.0470	0.0172
0.2120	1.1473	0.7294	0.3866	0.2243	0.1038	0.0432
0.1048	0.5376	1.7392	0.9401	0.4337	0.2247	0.0792
0.0680	0.2805	0.8276	2.2078	1.0612	0.4293	0.1732
0.0420	0.1818	0.4306	1.0361	2.5382	1.0930	0.3422
0.0264	0.1066	0.2619	0.5052	1.1218	2.6781	0.9263
0.0125	0.0527	0.1197	0.2427	0.4275	0.9672	2.3929

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 124

0.4680	0.4040	0.2803	0.2027	0.1152	0.0618	0.0225
0.2078	1.1182	0.7532	0.4475	0.2752	0.1326	0.0533
0.1052	0.5354	1.7138	0.9871	0.4980	0.2613	0.0924
0.0686	0.2835	0.8280	2.1736	1.0906	0.4602	0.1818
0.0422	0.1824	0.4324	1.0256	2.4638	1.0716	0.3321
0.0262	0.1058	0.2597	0.4984	1.0850	2.5542	0.8662
0.0122	0.0520	0.1178	0.2383	0.4113	0.9196	2.2623

Plan form 133

0.3211	0.2306	0.0958	0.0473	0.0157	0.0088	0.0017
0.1288	0.7090	0.3440	0.1091	0.0521	0.0153	0.0072
0.0553	0.2974	1.0068	0.3876	0.1058	0.0465	0.0108
0.0332	0.1325	0.4231	1.2330	0.4134	0.1002	0.0350
0.0184	0.0817	0.1871	0.5130	1.4131	0.4314	0.0833
0.0116	0.0443	0.1126	0.2170	0.5688	1.5350	0.3999
0.0052	0.0234	0.0486	0.1098	0.1948	0.5371	1.4675

Plan form 211

0.7880	0.3757	0.2328	0.1249	0.1136	0.0483	0.0348
0.3226	1.9728	1.1466	0.5949	0.4275	0.2333	0.1207
0.1616	0.9288	3.3173	1.8705	1.0286	0.6356	0.2827
0.1113	0.4977	1.6335	4.4982	2.4502	1.2524	0.6013
0.0715	0.3361	0.8825	2.1999	5.3564	2.6440	1.0507
0.0457	0.1984	0.5437	1.1016	2.4476	5.6218	2.1642
0.0215	0.0976	0.2480	0.5251	0.9506	2.0581	4.8750

Plan form 213

0.8309	0.7378	0.5558	0.4614	0.3260	0.2142	0.1003
0.3772	2.0167	1.4397	0.9886	0.7345	0.4526	0.2217
0.1989	1.0005	3.1596	2.0043	1.2445	0.8041	0.3694
0.1344	0.5566	1.5990	4.1013	2.3483	1.2697	0.6159
0.0856	0.3691	0.8784	2.0331	4.7209	2.3730	0.9561
0.0538	0.2183	0.5365	1.0285	2.1700	4.8563	1.8744
0.0253	0.1063	0.2455	0.4888	0.8479	1.7823	4.1706

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 214

0.8214	0.7350	0.5638	0.4791	0.3488	0.2341	0.1115
0.3750	2.0010	1.4453	1.0152	0.7716	0.4870	0.2414
0.1992	0.9987	3.1426	2.0196	1.2799	0.8406	0.3918
0.1349	0.5578	1.5967	4.0786	2.3577	1.2922	0.6318
0.0859	0.3691	0.8774	2.0246	4.6789	2.3629	0.9571
0.0538	0.2176	0.5341	1.0228	2.1493	4.7979	1.8522
0.0252	0.1056	0.2438	0.4849	0.8388	1.7594	4.1134

Plan form 221

0.3909	0.0451	0.0940	-0.0100	0.0491	-0.0093	0.0157
0.1372	1.0008	0.4340	0.1749	0.1177	0.0581	0.0298
0.0498	0.4215	1.7701	0.8148	0.3618	0.2087	0.0852
0.0409	0.2024	0.8049	2.4866	1.1785	0.5089	0.2330
0.0256	0.1372	0.4071	1.1530	3.0679	1.3850	0.4928
0.0167	0.0797	0.2528	0.5558	1.3615	3.3390	1.2305
0.0079	0.0401	0.1144	0.2674	0.5179	1.2086	2.9890

Plan form 222

0.4799	0.3884	0.2364	0.1625	0.0945	0.0570	0.0240
0.2049	1.1187	0.6938	0.3765	0.2407	0.1273	0.0593
0.0994	0.5165	1.7002	0.9274	0.4657	0.2694	0.1100
0.0645	0.2673	0.8048	2.1930	1.1014	0.5027	0.2260
0.0400	0.1740	0.4182	1.0317	2.5637	1.1729	0.4193
0.0252	0.1018	0.2547	0.5027	1.1395	2.7199	0.9964
0.0119	0.0501	0.1160	0.2403	0.4351	0.9839	2.4155

Plan form 223

0.4630	0.3942	0.2677	0.1966	0.1202	0.0719	0.0305
0.2034	1.0996	0.7295	0.4355	0.2862	0.1550	0.0709
0.1016	0.5207	1.6829	0.9700	0.5165	0.3005	0.1236
0.0660	0.2736	0.8088	2.1521	1.1129	0.5208	0.2329
0.0406	0.1765	0.4221	1.0175	2.4766	1.1406	0.4081
0.0253	0.1025	0.2546	0.4954	1.0991	2.5944	0.9449
0.0119	0.0501	0.1156	0.2357	0.4189	0.9365	2.2942

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 224

0.4501	0.3925	0.2825	0.2199	0.1414	0.0853	0.0363
0.2010	1.0804	0.7446	0.4750	0.3243	0.1800	0.0815
0.1025	0.5211	1.6663	0.9996	0.5605	0.3303	0.1364
0.0669	0.2773	0.8111	2.1277	1.1303	0.5421	0.2408
0.0410	0.1778	0.4243	1.0096	2.4222	1.1227	0.4003
0.0252	0.1021	0.2529	0.4890	1.0700	2.5043	0.9023
0.0117	0.0495	0.1138	0.2308	0.4048	0.8987	2.2018

Plan form 231

0.1984	-0.0745	0.0832	-0.0562	0.0488	-0.0287	0.0161
0.0546	0.5276	0.1034	0.0505	0.0146	0.0176	0.0025
0.0176	0.1849	0.9732	0.2873	0.1025	0.0478	0.0210
0.0125	0.0684	0.3811	1.4238	0.4989	0.1627	0.0691
0.0071	0.0478	0.1618	0.5872	1.8379	0.6692	0.1880
0.0049	0.0260	0.1026	0.2536	0.7555	2.1132	0.6812
0.0022	0.0140	0.0450	0.1257	0.2706	0.7419	2.0173

Plan form 232

0.3060	0.2063	0.0861	0.0506	0.0223	0.0140	0.0046
0.1175	0.6621	0.3144	0.1186	0.0662	0.0291	0.0132
0.0484	0.2683	0.9568	0.3925	0.1406	0.0728	0.0251
0.0292	0.1180	0.3961	1.2182	0.4686	0.1577	0.0647
0.0165	0.0737	0.1776	0.5086	1.4455	0.5288	0.1454
0.0104	0.0408	0.1068	0.2212	0.5881	1.5960	0.4987
0.0048	0.0208	0.0471	0.1080	0.2084	0.5548	1.5095

Plan form 233

0.2916	0.2225	0.1161	0.0691	0.0327	0.0181	0.0063
0.1188	0.6571	0.3615	0.1568	0.0869	0.0373	0.0165
0.0522	0.2801	0.9545	0.4355	0.1668	0.0846	0.0282
0.0313	0.1280	0.4070	1.1844	0.4788	0.1633	0.0654
0.0175	0.0779	0.1848	0.4980	1.3598	0.4981	0.1339
0.0107	0.0424	0.1085	0.2152	0.5484	1.4635	0.4451
0.0049	0.0213	0.0472	0.1040	0.1915	0.5037	1.3720

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 234

0.2782	0.2263	0.1361	0.0866	0.0434	0.0226	0.0078
0.1177	0.6435	0.3892	0.1923	0.1075	0.0466	0.0190
0.0543	0.2855	0.9486	0.4723	0.1956	0.0966	0.0312
0.0327	0.1347	0.4157	1.1657	0.4952	0.1718	0.0659
0.0182	0.0805	0.1906	0.4934	1.3019	0.4767	0.1229
0.0108	0.0427	0.1086	0.2101	0.5177	1.3585	0.3947
0.0047	0.0211	0.0457	0.1001	0.1747	0.4592	1.2514

Plan form 411

0.7696	0.6033	0.4093	0.3593	0.2547	0.1855	0.0887
0.3104	1.9606	1.3175	0.8843	0.6809	0.4424	0.2285
0.1509	0.9175	3.1950	1.9892	1.2453	0.8410	0.4047
0.1016	0.4874	1.5690	4.2766	2.4530	1.3592	0.6838
0.0639	0.3222	0.8413	2.0924	5.0200	2.5502	1.0523
0.0404	0.1886	0.5126	1.0465	2.2977	5.2168	2.0308
0.0189	0.0923	0.2333	0.4969	0.8944	1.9138	4.4876

Plan form 412

0.8298	0.7335	0.5547	0.4724	0.3508	0.2439	0.1213
0.3734	2.0080	1.4338	1.0033	0.7760	0.5062	0.2610
0.1932	0.9843	3.1459	2.0120	1.2878	0.8693	0.4206
0.1280	0.5363	1.5738	4.0968	2.3778	1.3290	0.6688
0.0797	0.3491	0.8489	2.0138	4.7319	2.4126	0.9988
0.0493	0.2026	0.5115	1.0060	2.1652	4.8780	1.9005
0.0229	0.0977	0.2313	0.4746	0.8412	1.7880	4.1853

Plan form 413

0.8244	0.7351	0.5631	0.4830	0.3605	0.2509	0.1249
0.3743	2.0033	1.4439	1.0204	0.7919	0.5179	0.2669
0.1962	0.9911	3.1423	2.0234	1.3026	0.8804	0.4264
0.1304	0.5440	1.5804	4.0822	2.3775	1.3324	0.6706
0.0810	0.3528	0.8527	2.0078	4.6971	2.3970	0.9931
0.0496	0.2030	0.5097	0.9985	2.1444	4.8292	1.8813
0.0227	0.0969	0.2283	0.4675	0.8290	1.7664	4.1417

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 414

0.8214	0.7357	0.5675	0.4890	0.3663	0.2551	0.1271
0.3747	2.0009	1.4498	1.0307	0.8019	0.5254	0.2707
0.1979	0.9955	3.1426	2.0323	1.3133	0.8883	0.4305
0.1321	0.5494	1.5866	4.0784	2.3806	1.3363	0.6726
0.0818	0.3551	0.8552	2.0051	4.6791	2.3884	0.9897
0.0493	0.2016	0.5053	0.9888	2.1263	4.7976	1.8677
0.0223	0.0945	0.2221	0.4559	0.8122	1.7454	4.1139

Plan form 415

0.8213	0.7365	0.5693	0.4913	0.3684	0.2566	0.1279
0.3751	2.0021	1.4530	1.0348	0.8056	0.5280	0.2720
0.1986	0.9978	3.1459	2.0371	1.3178	0.8913	0.4321
0.1326	0.5514	1.5901	4.0812	2.3833	1.3380	0.6734
0.0817	0.3554	0.8558	2.0045	4.6757	2.3856	0.9883
0.0487	0.1995	0.5012	0.9815	2.1160	4.7863	1.8618
0.0211	0.0908	0.2157	0.4459	0.7979	1.7310	4.1038

Plan form 421

0.3665	0.2651	0.1344	0.1461	0.0797	0.0753	0.0280
0.1080	1.0036	0.6046	0.3675	0.2845	0.1798	0.0951
0.0396	0.3855	1.6974	0.9759	0.5701	0.3856	0.1828
0.0259	0.1687	0.7283	2.3500	1.2743	0.6754	0.3404
0.0145	0.1063	0.3409	1.0508	2.8490	1.3994	0.5628
0.0092	0.0576	0.1996	0.4804	1.2357	3.0568	1.1731
0.0041	0.0282	0.0864	0.2229	0.4570	1.0956	2.7036

Plan form 422

0.4626	0.3898	0.2743	0.2243	0.1610	0.1114	0.0552
0.1957	1.0867	0.7305	0.4783	0.3610	0.2310	0.1196
0.0893	0.4867	1.6634	1.0025	0.6074	0.4055	0.1943
0.0530	0.2311	0.7548	2.1514	1.1883	0.6376	0.3207
0.0294	0.1373	0.3587	0.9698	2.5094	1.2365	0.4991
0.0171	0.0726	0.2016	0.4368	1.0771	2.6453	1.0142
0.0074	0.0337	0.0851	0.1970	0.3899	0.9373	2.3336

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 423

0.4550	0.3932	0.2854	0.2353	0.1694	0.1166	0.0577
0.1988	1.0834	0.7465	0.4984	0.3758	0.2404	0.1241
0.0954	0.5027	1.6634	1.0185	0.6229	0.4145	0.1987
0.0574	0.2457	0.7707	2.1322	1.1849	0.6376	0.3201
0.0316	0.1441	0.3672	0.9630	2.4550	1.2092	0.4881
0.0178	0.0743	0.2012	0.4266	1.0422	2.5649	0.9813
0.0075	0.0334	0.0826	0.1875	0.3682	0.8969	2.2614

Plan form 424

0.4500	0.3943	0.2920	0.2427	0.1750	0.1198	0.0592
0.2000	1.0803	0.7564	0.5124	0.3862	0.2464	0.1267
0.0991	0.5128	1.6662	1.0323	0.6352	0.4209	0.2016
0.0606	0.2570	0.7852	2.1274	1.1870	0.6385	0.3197
0.0331	0.1493	0.3745	0.9613	2.4225	1.1895	0.4790
0.0179	0.0744	0.1985	0.4146	1.0100	2.5034	0.9532
0.0072	0.0318	0.0776	0.1741	0.3407	0.8520	2.2051

Plan form 425

0.4489	0.3951	0.2947	0.2457	0.1773	0.1208	0.0596
0.2006	1.0806	0.7610	0.5182	0.3904	0.2483	0.1273
0.1006	0.5172	1.6700	1.0393	0.6405	0.4228	0.2020
0.0620	0.2619	0.7926	2.1299	1.1894	0.6381	0.3187
0.0338	0.1515	0.3780	0.9619	2.4125	1.1804	0.4737
0.0179	0.0739	0.1960	0.4068	0.9923	2.4748	0.9379
0.0069	0.0304	0.0736	0.1645	0.3216	0.8211	2.1765

Plan form 431

0.1750	0.1197	0.0182	0.0634	0.0074	0.0330	0.0029
0.0235	0.5297	0.2729	0.1198	0.1104	0.0559	0.0371
0.0052	0.1255	0.9429	0.4662	0.2276	0.1616	0.0718
0.0041	0.0360	0.2865	1.3633	0.6566	0.3107	0.1612
0.0016	0.0228	0.0952	0.4733	1.7325	0.7850	0.2961
0.0013	0.0098	0.0531	0.1661	0.6302	1.9635	0.7252
0.0004	0.0052	0.0195	0.0732	0.1936	0.6366	1.8505

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 432

0.2946	0.2222	0.1337	0.1009	0.0673	0.0463	0.0229
0.1051	0.6443	0.3781	0.2124	0.1534	0.0934	0.0496
0.0347	0.2259	0.9380	0.4936	0.2599	0.1714	0.0799
0.0167	0.0767	0.3280	1.1969	0.5863	0.2814	0.1434
0.0074	0.0389	0.1134	0.4235	1.4179	0.6384	0.2402
0.0040	0.0169	0.0565	0.1438	0.4984	1.5552	0.5692
0.0015	0.0075	0.0202	0.0592	0.1441	0.4816	1.4631

Plan form 433

0.2858	0.2290	0.1466	0.1110	0.0734	0.0494	0.0242
0.1125	0.6467	0.4003	0.2335	0.1653	0.1000	0.0522
0.0423	0.2510	0.9437	0.5114	0.2741	0.1766	0.0825
0.0205	0.0914	0.3499	1.1739	0.5792	0.2779	0.1401
0.0089	0.0444	0.1226	0.4192	1.3489	0.6026	0.2254
0.0044	0.0186	0.0575	0.1382	0.4610	1.4477	0.5247
0.0016	0.0076	0.0199	0.0535	0.1265	0.4285	1.3587

Plan form 434

0.2781	0.2309	0.1549	0.1185	0.0779	0.0510	0.0247
0.1153	0.6434	0.4143	0.2492	0.1744	0.1035	0.0531
0.0477	0.2680	0.9488	0.5284	0.2862	0.1798	0.0833
0.0238	0.1042	0.3707	1.1659	0.5788	0.2752	0.1365
0.0102	0.0492	0.1314	0.4203	1.3031	0.5737	0.2116
0.0047	0.0195	0.0575	0.1322	0.4276	1.3584	0.4833
0.0016	0.0070	0.0189	0.0460	0.1083	0.3698	1.2659

Plan form 435

0.2756	0.2318	0.1584	0.1218	0.0798	0.0513	0.0246
0.1163	0.6429	0.4205	0.2563	0.1783	0.1040	0.0528
0.0500	0.2751	0.9535	0.5375	0.2916	0.1799	0.0825
0.0254	0.1103	0.3814	1.1681	0.5805	0.2724	0.1335
0.0108	0.0515	0.1356	0.4225	1.2872	0.5584	0.2030
0.0047	0.0194	0.0563	0.1275	0.4067	1.3124	0.4590
0.0016	0.0063	0.0179	0.0405	0.0973	0.3318	1.2174

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 441

0.0843	0.0595	-0.0188	0.0360	-0.0141	0.0190	-0.0046
-0.0025	0.2843	0.1291	0.0151	0.0485	0.0049	0.0164
0.0018	0.0185	0.5369	0.2202	0.0635	0.0641	0.0195
0.0002	0.0070	0.0731	0.8100	0.3242	0.1129	0.0690
0.0003	0.0030	0.0184	0.1574	1.0751	0.4186	0.1336
0.0001	0.0016	0.0092	0.0375	0.2534	1.2910	0.4384
0.0001	0.0004	0.0037	0.0143	0.0561	0.3074	1.3411

Plan form 443

0.2039	0.1408	0.0721	0.0480	0.0276	0.0178	0.0087
0.0624	0.4167	0.2131	0.0963	0.0635	0.0335	0.0185
0.0149	0.1090	0.5629	0.2488	0.1004	0.0641	0.0271
0.0053	0.0251	0.1297	0.6779	0.2733	0.0994	0.0534
0.0020	0.0091	0.0300	0.1447	0.7776	0.2892	0.0888
0.0007	0.0040	0.0103	0.0328	0.1600	0.8548	0.2755
0.0005	0.0002	0.0056	0.0066	0.0350	0.1562	0.8737

Plan form 511

0.7565	0.6388	0.4240	0.4001	0.2718	0.2110	0.0958
0.2906	1.9664	1.3378	0.9204	0.7129	0.4708	0.2423
0.1337	0.8969	3.2016	2.0136	1.2736	0.8678	0.4191
0.0882	0.4621	1.5494	4.2932	2.4733	1.3799	0.6958
0.0540	0.3002	0.8152	2.0836	5.0421	2.5677	1.0616
0.0340	0.1729	0.4911	1.0314	2.2985	5.2438	2.0423
0.0157	0.0841	0.2214	0.4872	0.8907	1.9211	4.5129

Plan form 512

0.8605	0.7605	0.5742	0.4923	0.3690	0.2582	0.1290
0.3691	2.0852	1.4841	1.0411	0.8122	0.5331	0.2759
0.1638	0.9926	3.2595	2.0821	1.3385	0.9083	0.4409
0.0685	0.4944	1.5748	4.2374	2.4592	1.3757	0.6944
-0.0185	0.2675	0.7611	2.0143	4.8901	2.4875	1.0335
-0.0610	0.1031	0.4098	0.9406	2.1908	5.0674	1.9706
-0.0948	-0.0245	0.1836	0.3662	0.8420	1.8407	4.3474

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 513

0.8305	0.7397	0.5666	0.4874	0.3657	0.2557	0.1278
0.3760	2.0159	1.4520	1.0280	0.8014	0.5267	0.2722
0.1952	0.9917	3.1586	2.0345	1.3139	0.8917	0.4332
0.1274	0.5356	1.5751	4.1004	2.3904	1.3435	0.6779
0.0767	0.3389	0.8326	1.9971	4.7178	2.4096	0.9997
0.0454	0.1883	0.4850	0.9731	2.1355	4.8542	1.8914
0.0200	0.0874	0.2109	0.4464	0.8131	1.7667	4.1693

Plan form 514

0.8290	0.7414	0.5710	0.4923	0.3696	0.2584	0.1291
0.3772	2.0172	1.4592	1.0368	0.8084	0.5315	0.2746
0.1978	0.9989	3.1640	2.0437	1.3220	0.8969	-0.4359
0.1300	0.5438	1.5850	4.1014	2.3931	1.3457	0.6790
0.0780	0.3424	0.8360	1.9944	4.7025	2.4009	0.9960
0.0447	0.1856	0.4767	0.9564	2.1108	4.8238	1.8780
0.0182	0.0826	0.1996	0.4252	0.7842	1.7384	4.1443

Plan form 515

0.8300	0.7432	0.5732	0.4944	0.3711	0.2592	0.1295
0.3781	2.0210	1.4638	1.0409	0.8111	0.5331	0.2754
0.1987	1.0027	3.1711	2.0495	1.3254	0.8988	0.4368
0.1307	0.5471	1.5905	4.1080	2.3959	1.3465	0.6794
0.0767	0.3432	0.8370	1.9936	4.7015	2.3980	0.9945
0.0432	0.1824	0.4696	0.9436	2.0949	4.8127	1.8721
0.0225	0.0784	0.1890	0.4086	0.7584	1.7166	4.1355

Plan form 521

0.3522	0.3051	0.1265	0.1785	0.0778	0.0949	0.0282
0.0823	1.0094	0.6313	0.3808	0.3097	0.1935	0.1060
0.0226	0.3380	1.7292	1.0080	0.5956	0.4110	0.1959
0.0149	0.1237	0.6792	2.4175	1.3208	0.7075	0.3598
0.0071	0.0740	0.2813	1.0208	2.9561	1.4586	0.5895
0.0046	0.0362	0.1558	0.4298	1.2385	3.1959	1.2285
0.0018	0.0174	0.0626	0.1912	0.4359	1.1268	2.8444

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 522

0.4811	0.4029	0.2837	0.2345	0.1710	0.1202	0.0602
0.1982	1.1212	0.7511	0.4948	0.3790	0.2464	0.1289
0.0825	0.4772	1.7030	1.0256	0.6269	0.4248	0.2056
0.0442	0.2019	0.7267	2.1959	1.2146	0.6574	0.3338
0.0217	0.1090	0.3079	0.9345	2.5680	1.2687	0.5146
0.0117	0.0514	0.1594	0.3810	1.0538	2.7248	1.0464
0.0046	0.0225	0.0610	0.1612	0.3539	0.9404	2.4232

Plan form 523

0.4729	0.4061	0.2934	0.2428	0.1765	0.1232	0.0617
0.2036	1.1193	0.7666	0.5117	0.3894	0.2525	0.1317
0.0923	0.5025	1.7065	1.0404	0.6387	0.4305	0.2086
0.0508	0.2242	0.7521	2.1755	1.2066	0.6537	0.3315
0.0246	0.1188	0.3208	0.9280	2.5031	1.2341	0.5006
0.0126	0.0540	0.1595	0.3674	1.0081	2.6285	1.0074
0.0047	0.0224	0.0581	0.1488	0.3229	0.8863	2.3386

Plan form 524

0.4679	0.4077	0.2997	0.2487	0.1800	0.1245	0.0623
0.2059	1.1180	0.7771	0.5236	0.3961	0.2551	0.1327
0.0984	0.5187	1.7133	1.0540	0.6474	0.4330	0.2097
0.0558	0.2420	0.7754	2.1728	1.2055	0.6502	0.3292
0.0270	0.1268	0.3326	0.9278	2.4642	1.2076	0.4887
0.0130	0.0547	0.1570	0.3515	0.9636	2.5522	0.9734
0.0044	0.0209	0.0525	0.1322	0.2836	0.8220	2.2708

Plan form 525

0.4670	0.4089	0.3026	0.2513	0.1813	0.1245	0.0621
0.2070	1.1195	0.7825	0.5291	0.3987	0.2550	0.1324
0.1007	0.5255	1.7198	1.0614	0.6510	0.4324	0.2089
0.0581	0.2499	0.7870	2.1775	1.2067	0.6470	0.3268
0.0280	0.1303	0.3383	0.9295	2.4523	1.1944	0.4815
0.0130	0.0543	0.1546	0.3414	0.9389	2.5152	0.9542
0.0043	0.0195	0.0486	0.1207	0.2581	0.7764	2.2347

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 531

0.1653	0.1575	0.0054	0.0853	-0.0008	0.0456	0.0006
0.0080	0.5278	0.3113	0.1118	0.1315	0.0542	0.0458
0.0017	0.0819	0.9658	0.5018	0.2314	0.1802	0.0768
0.0017	0.0160	0.2238	1.4197	0.6993	0.3271	0.1778
0.0003	0.0109	0.0527	0.4069	1.8331	0.8434	0.3193
0.0005	0.0031	0.0287	0.1081	0.5826	2.1160	0.7909
0.0000	0.0022	0.0077	0.0450	0.1451	0.6321	2.0355

Plan form 532

0.3224	0.2394	0.1430	0.1087	0.0736	0.0518	0.0263
0.1040	0.6876	0.3995	0.2226	0.1639	0.1016	0.0556
0.0261	0.2036	0.9807	0.5146	0.2676	0.1827	0.0862
0.0103	0.0507	0.2838	1.2450	0.6108	0.2915	0.1540
0.0036	0.0220	0.0720	0.3678	1.4826	0.6725	0.2541
0.0017	0.0075	0.0315	0.0933	0.4463	1.6486	0.6112
0.0005	0.0031	0.0088	0.0342	0.1004	0.4560	1.5869

Plan form 533

0.3120	0.2466	0.1558	0.1180	0.0786	0.0539	0.0272
0.1165	0.6946	0.4235	0.2446	0.1748	0.1074	0.0576
0.0359	0.2402	0.9931	0.5312	0.2821	0.1855	0.0887
0.0143	0.0671	0.3148	1.2196	0.5973	0.2849	0.1483
0.0048	0.0269	0.0822	0.3662	1.3989	0.6257	0.2352
0.0020	0.0088	0.0324	0.0894	0.4036	1.5145	0.5562
0.0006	0.0029	0.0092	0.0289	0.0845	0.3885	1.4551

Plan form 534

0.3025	0.2482	0.1640	0.1247	0.0820	0.0542	0.0270
0.1216	0.6915	0.4387	0.2600	0.1823	0.1089	0.0575
0.0439	0.2663	1.0026	0.5487	0.2935	0.1860	0.0885
0.0183	0.0830	0.3443	1.2118	0.5926	0.2786	0.1423
0.0060	0.0319	0.0926	0.3704	1.3424	0.5865	0.2175
0.0022	0.0098	0.0325	0.0852	0.3650	1.4005	0.5046
0.0008	0.0022	0.0097	0.0214	0.0703	0.3120	1.3355

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

## Plan form 541

0.0775	0.0879	-0.0280	0.0472	-0.0194	0.0245	-0.0060
-0.0091	0.2728	0.1709	0.0010	0.0653	-0.0016	0.0223
0.0035	-0.0086	0.5368	0.2648	0.0531	0.0796	0.0180
-0.0010	0.0081	0.0236	0.8322	0.3687	0.1106	0.0816
0.0006	-0.0013	0.0125	0.0886	1.1273	0.4655	0.1425
-0.0002	0.0017	0.0008	0.0199	0.1769	1.3819	0.4926
0.0002	-0.0009	0.0036	0.0013	0.0330	0.2438	1.4899

## Plan form 611

0.7206	0.6798	0.3957	0.4399	0.2599	0.2357	0.0923
0.2286	1.9854	1.3536	0.9376	0.7326	0.4877	0.2506
0.0810	0.8139	3.2806	2.0617	1.3093	0.8963	0.4337
0.0501	0.3637	0.4933	4.4478	2.5589	1.4286	0.7213
0.0271	0.2198	0.7212	2.0850	5.2689	2.6788	1.1055
0.0166	0.1165	0.4119	0.9825	2.3590	5.5173	2.1457
0.0071	0.0549	0.1758	0.4499	0.8925	2.0068	4.7733

## Plan form 612

0.9317	0.8445	0.6442	0.5498	0.4142	0.2914	0.1460
0.3262	2.3229	1.6634	1.1581	0.9081	0.5987	0.3106
0.0397	1.0553	3.6525	2.3130	1.4875	1.0139	0.4930
-0.1363	0.4606	1.7185	4.7198	2.7307	1.5275	0.7726
-0.2009	0.2177	0.9076	2.2162	5.4711	2.7886	1.1586
-0.7620	-0.1079	0.3719	0.8740	2.3258	5.6396	2.1846
-2.3085	-0.6622	-0.5478	-0.1472	0.6123	1.7989	4.7809

## Plan form 613

0.8575	0.7591	0.5774	0.4965	0.3738	0.2628	0.1316
0.3839	2.0717	1.4821	1.0454	0.8178	0.5400	0.2799
0.1922	0.9977	3.2301	2.0696	1.3359	0.9109	0.4434
0.1164	0.5061	1.5601	4.1781	2.4279	1.3650	0.6905
0.0618	0.2879	0.7610	1.9604	4.8053	2.4494	1.0147
0.0308	0.1398	0.3990	0.8785	2.1042	4.9630	1.9300
0.0132	0.0739	0.1504	0.3708	0.7531	1.7715	4.2912

TABLE V.- Continued

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Continued

Plan form 614

0.8571	0.7624	0.5825	0.5001	0.3752	0.2634	0.1321
0.3871	2.0773	1.4918	1.0526	0.8205	0.5412	0.2807
0.1983	1.0127	3.2425	2.0790	1.3393	0.9120	0.4445
0.1238	0.5257	1.5813	4.1831	2.4266	1.3632	0.6902
0.0658	0.3010	0.7696	1.9567	4.7817	2.4336	1.0083
0.0335	0.1407	0.3886	0.8453	2.0533	4.9151	1.9097
0.0151	0.0528	0.1434	0.3294	0.6847	1.7104	4.2558

Plan form 615

0.8598	0.7660	0.5858	0.5025	0.3758	0.2634	0.1322
0.3891	2.0859	1.4994	1.0575	0.8217	0.5409	0.2808
0.2004	1.0206	3.2568	2.0877	1.3410	0.9115	0.4446
0.1258	0.5337	1.5927	4.1972	2.4286	1.3613	0.6899
0.0669	0.3044	0.7744	1.9574	4.7807	2.4270	1.0054
0.0316	0.1368	0.3766	0.8232	2.0202	4.8954	1.9003
0.0081	0.0491	0.1214	0.3057	0.6319	1.6618	4.2444

Plan form 621

0.4626	0.3898	0.2743	0.2243	0.1610	0.1114	0.0552
0.1957	1.0867	0.7305	0.4783	0.3610	0.2310	0.1196
0.0893	0.4867	1.6634	1.0025	0.6074	0.4055	0.1943
0.0530	0.2311	0.7548	2.1514	1.1883	0.6376	0.3207
0.0294	0.1373	0.3587	0.9698	2.5094	1.2365	0.4991
0.0171	0.0726	0.2016	0.4368	1.0771	2.6453	1.0142
0.0074	0.0337	0.0851	0.1970	0.3899	0.9373	2.3336

Plan form 622

0.5412	0.4412	0.3005	0.2465	0.1798	0.1287	0.0652
0.2056	1.2294	0.7985	0.5125	0.3945	0.2594	0.1377
0.0630	0.4461	1.8199	1.0640	0.6386	0.4391	0.2144
0.0259	0.1302	0.6457	2.3242	1.2584	0.6745	0.3474
0.0087	0.0564	0.1887	0.8325	2.7402	1.3405	0.5405
0.0041	0.0181	0.0813	0.2435	0.9787	2.9692	1.1372
0.0010	0.0078	0.0216	0.0896	0.2514	0.9404	2.7115

TABLE V.- Concluded

## AERODYNAMIC-INFLUENCE-COEFFICIENT MATRICES

(b) Antisymmetric loadings  $[Q_a]$  - Concluded

Plan form 623

0.5279	0.4439	0.3114	0.2541	0.1834	0.1295	0.0658
0.2174	1.2274	0.8185	0.5314	0.4032	0.2630	0.1394
0.0818	0.4981	1.8307	1.0838	0.6512	0.4429	0.2170
0.0352	0.1660	0.6941	2.2955	1.2397	0.6639	0.3412
0.0119	0.0686	0.2098	0.8283	2.6351	1.2802	0.5165
0.0050	0.0213	0.0834	0.2302	0.9078	2.8081	1.0729
0.0012	0.0081	0.0202	0.0786	0.2091	0.8464	2.5693

Plan form 624

0.5187	0.4446	0.3182	0.2595	0.1849	0.1282	0.0649
0.2221	1.2235	0.8305	0.5442	0.4070	0.2611	0.1380
0.0951	0.5320	1.8407	1.1016	0.6584	0.4406	0.2153
0.0436	0.1982	0.7395	2.2902	1.2329	0.6520	0.3342
0.0150	0.0804	0.2306	0.8330	2.5691	1.2299	0.4943
0.0056	0.0233	0.0837	0.2153	0.8411	2.6730	1.0133
0.0011	0.0073	0.0180	0.0637	0.1648	0.7335	2.4442

Plan form 631

0.1527	0.1970	-0.0172	0.1017	-0.0161	0.0545	-0.0039
-0.0108	0.5193	0.3665	0.0715	0.1506	0.0338	0.0534
0.0032	0.0157	1.0014	0.5575	0.1967	0.1942	0.0687
-0.0004	0.0058	0.1110	1.5241	0.7634	0.3146	0.1930
0.0002	0.0017	0.0133	0.2669	2.0281	0.9384	0.3385
0.0000	0.0003	0.0074	0.0340	0.4522	2.4311	0.9225
-0.0000	0.0005	0.0002	0.0147	0.0605	0.5756	2.4682

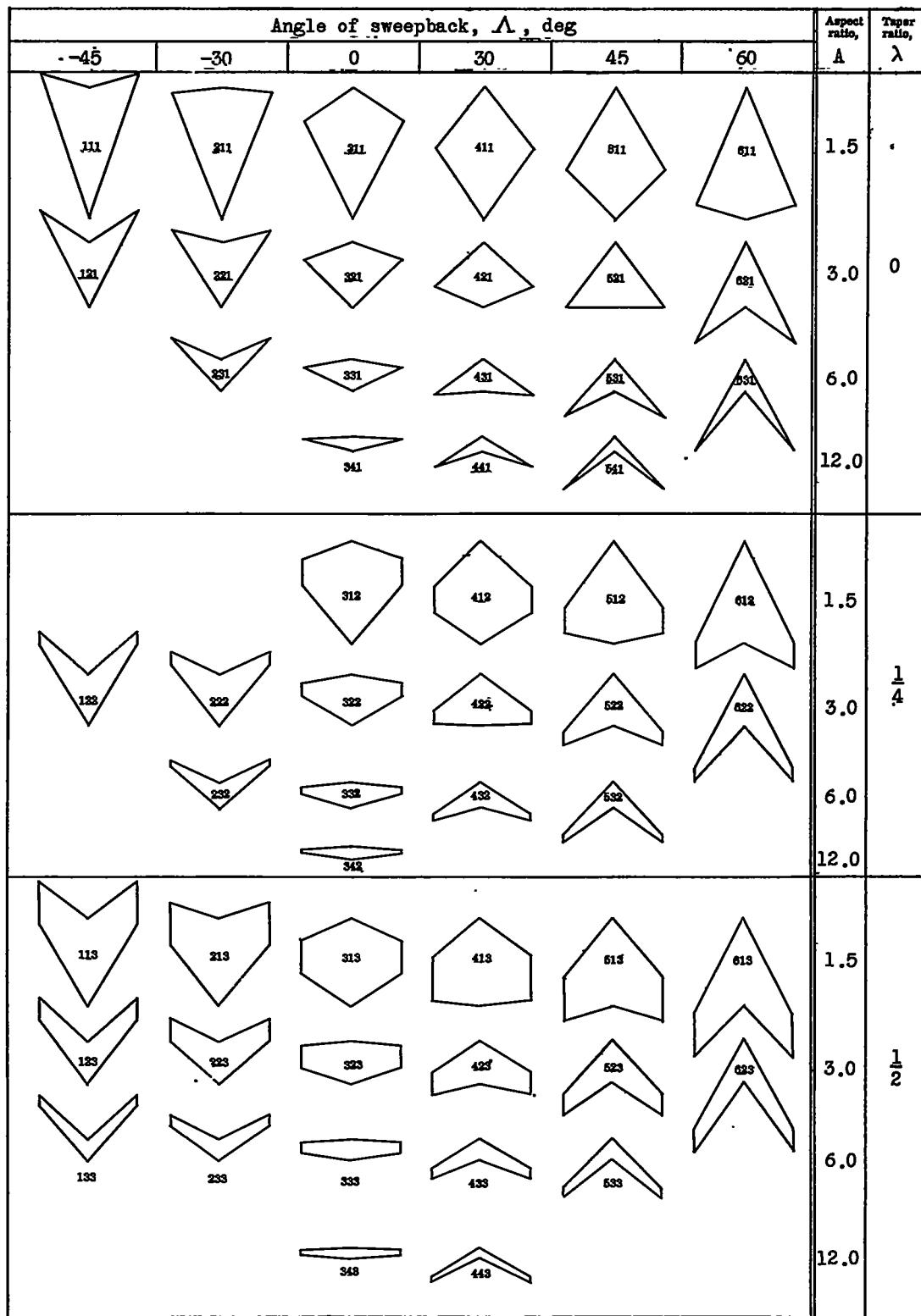


Figure 1.- Plan forms for which spanwise lift distributions are calculated.

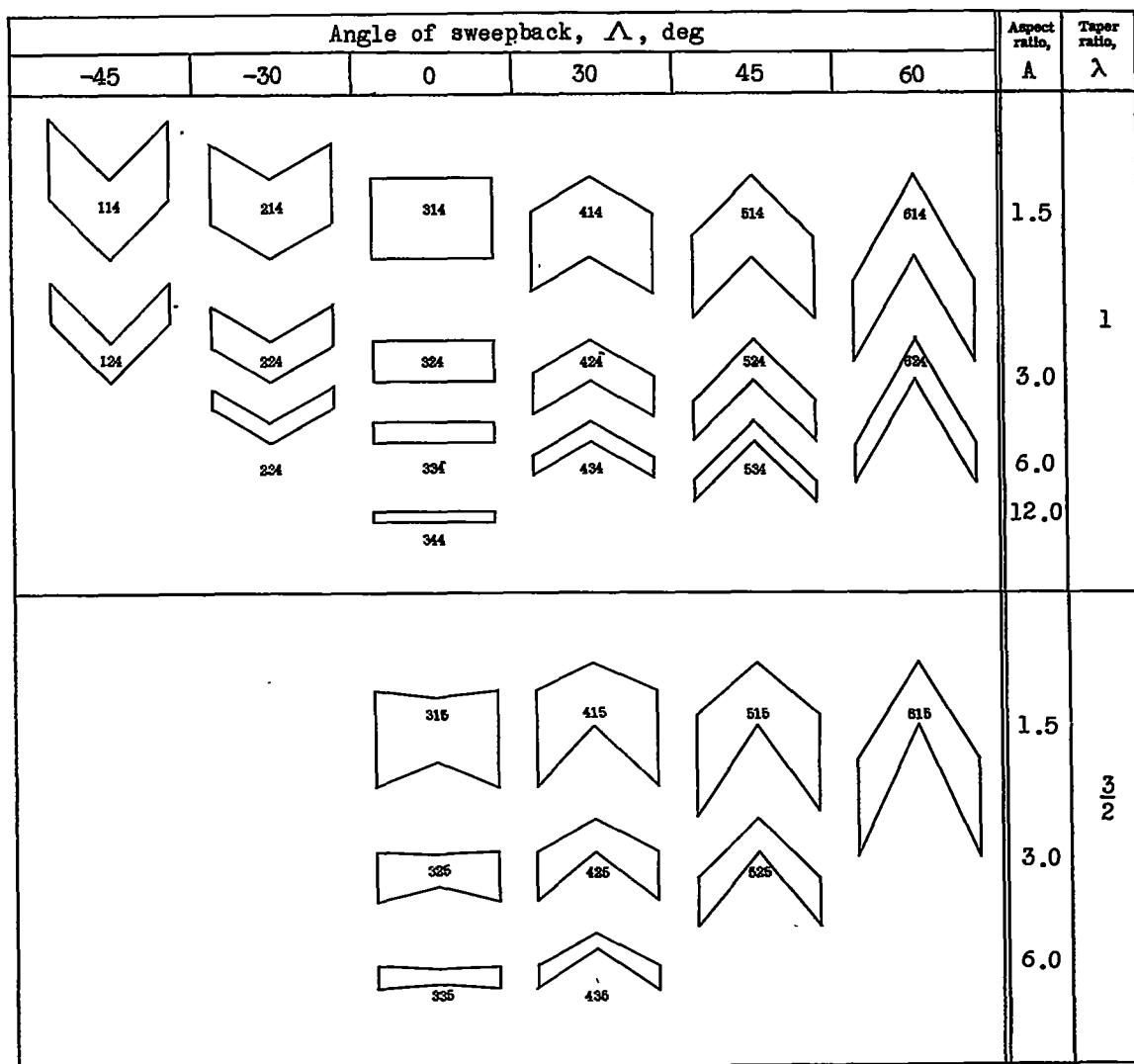


Figure 1.- Concluded.

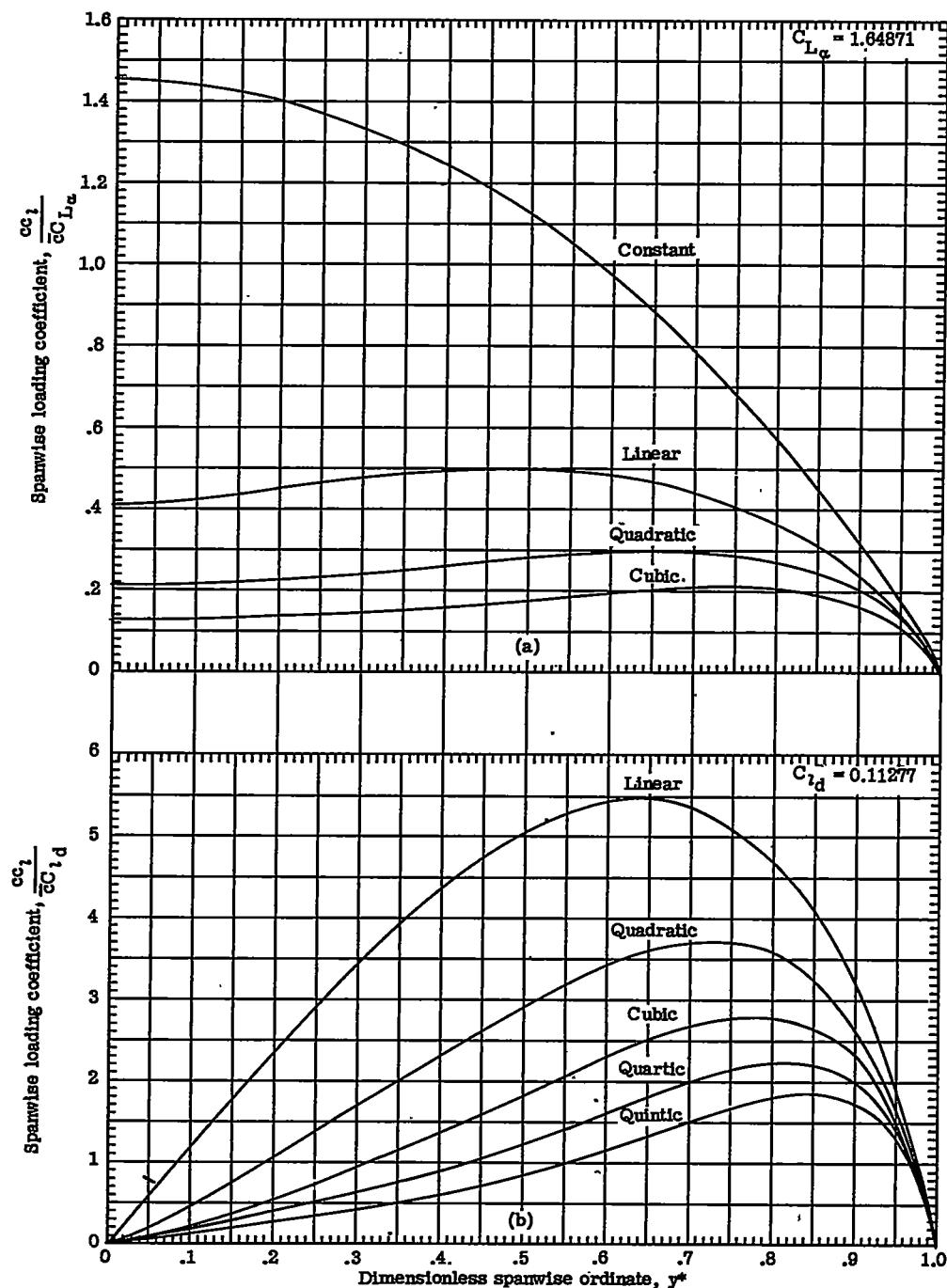


Figure 2.- Spanwise lift distributions for plan form 111 ( $A = 1.5$ ;  $\lambda = 0$ ;  $\Delta = -45^\circ$ ).

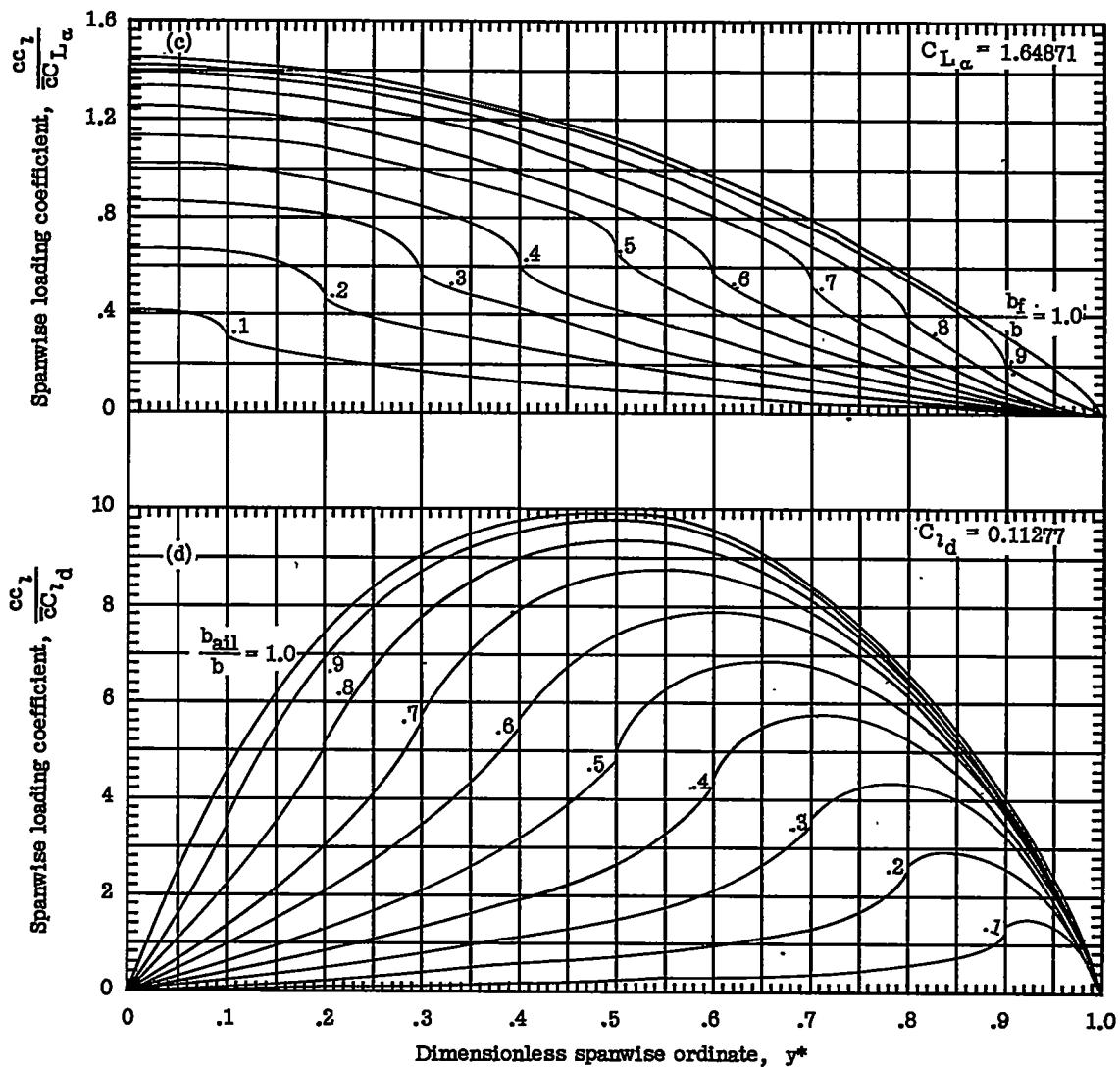
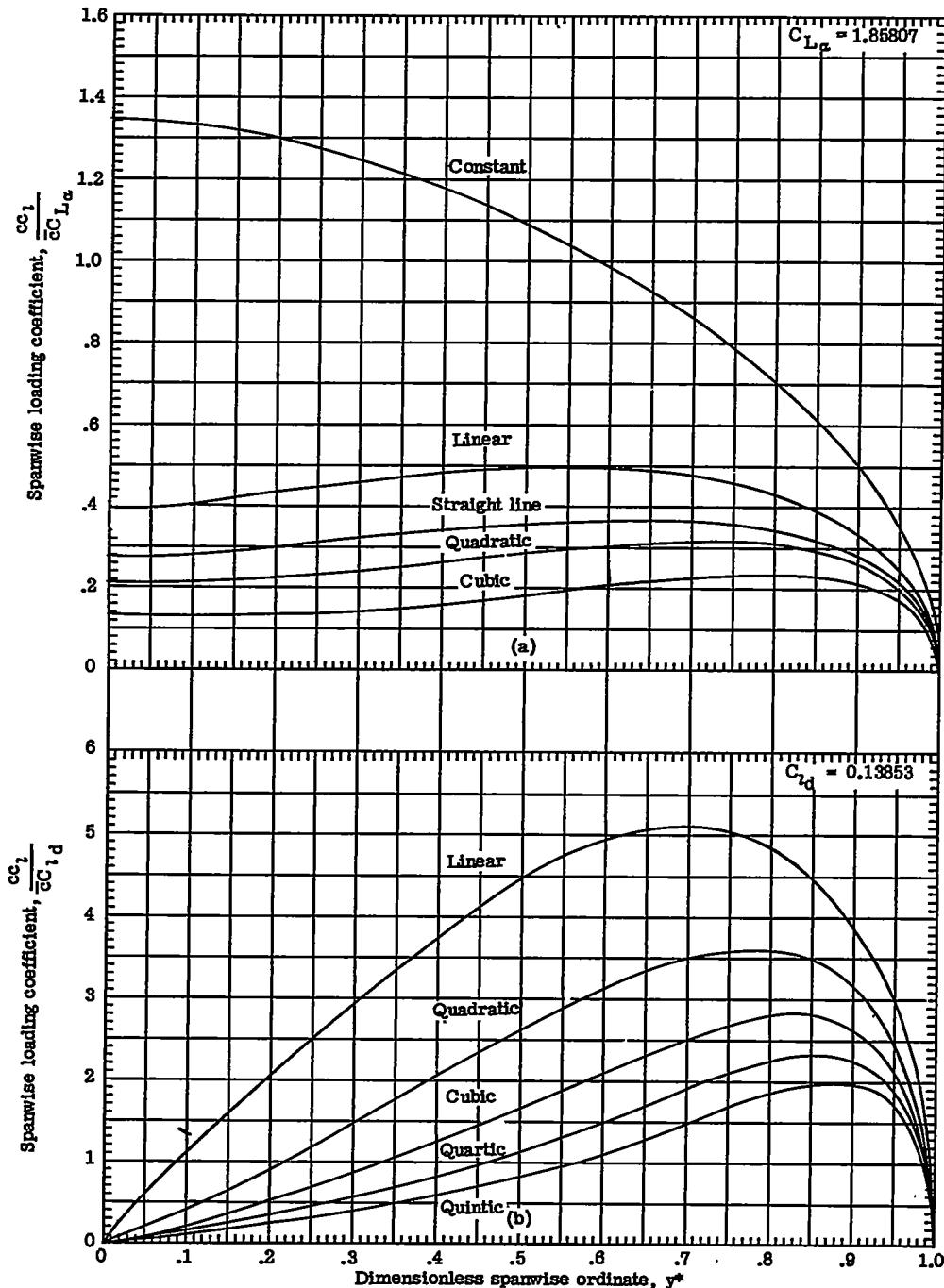


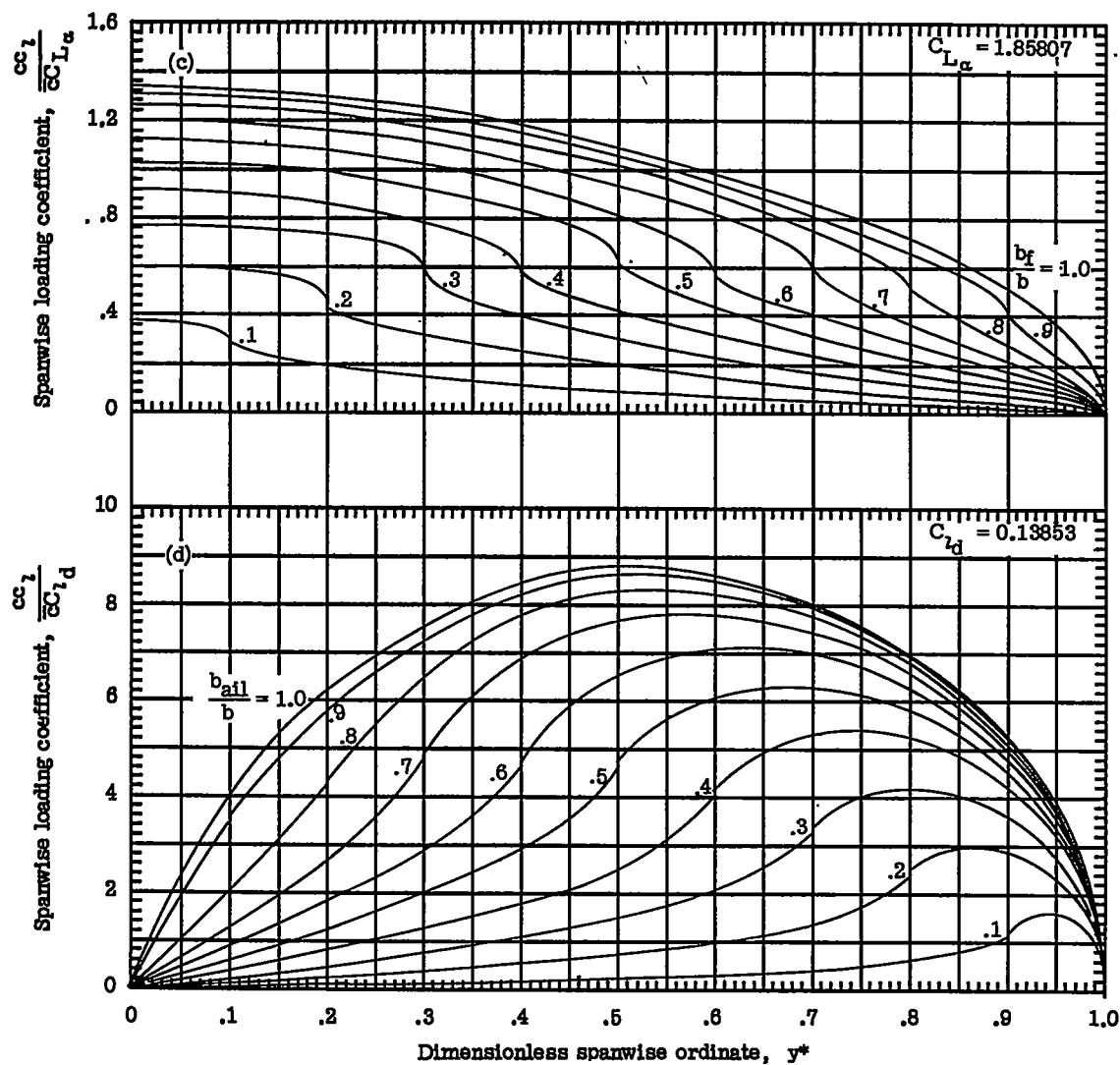
Figure 2.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

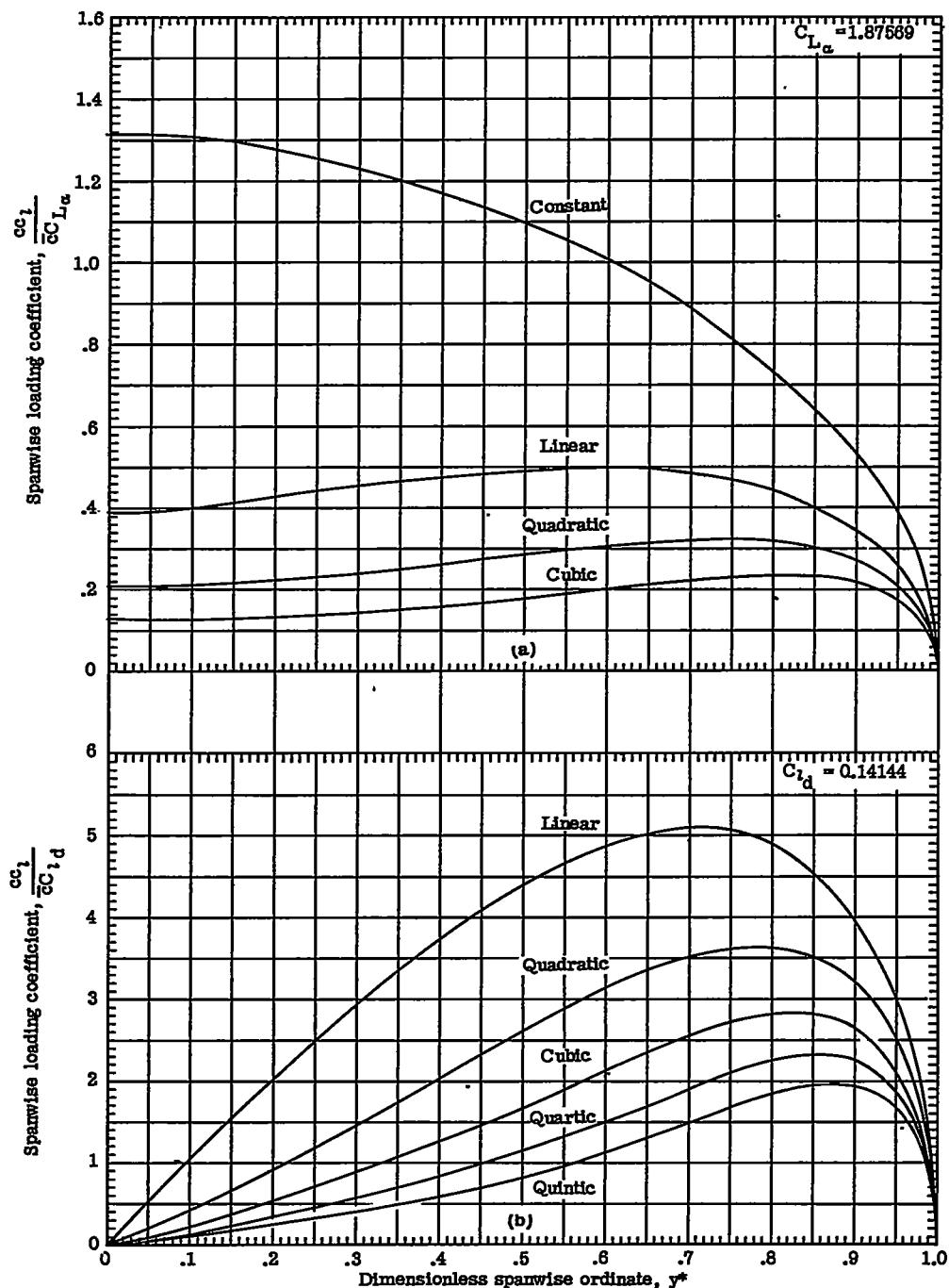
Figure 3.- Spanwise lift distributions for plan form 113 ( $A = 1.5$ ;  $\lambda = 0.50$ ;  $\Lambda = -45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 3.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 4.- Spanwise lift distributions for plan form 114 ( $A = 1.5$ ;  $\lambda = 1.00$ ;  $\Lambda = -45^\circ$ ).

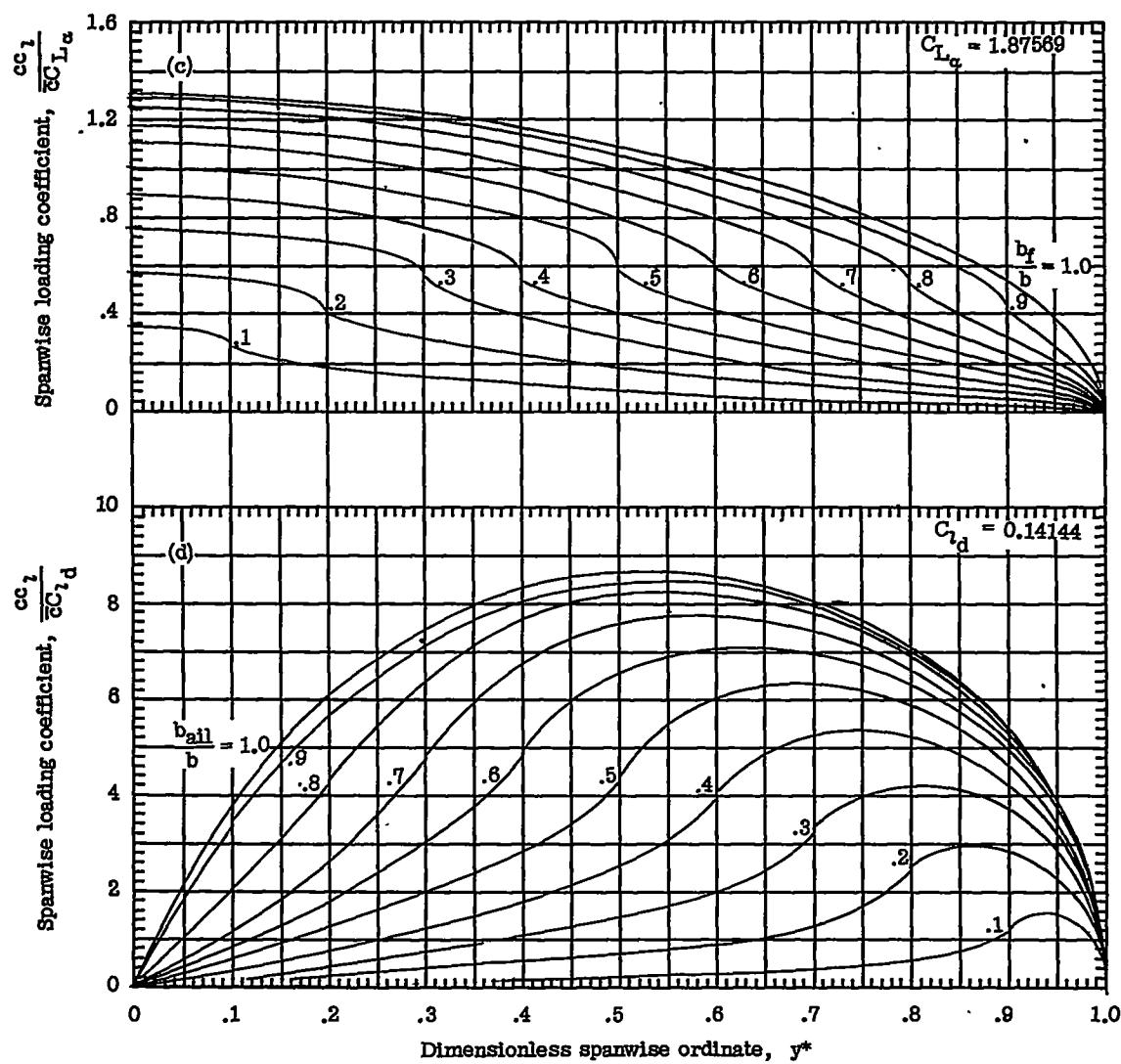


Figure 4.- Concluded.

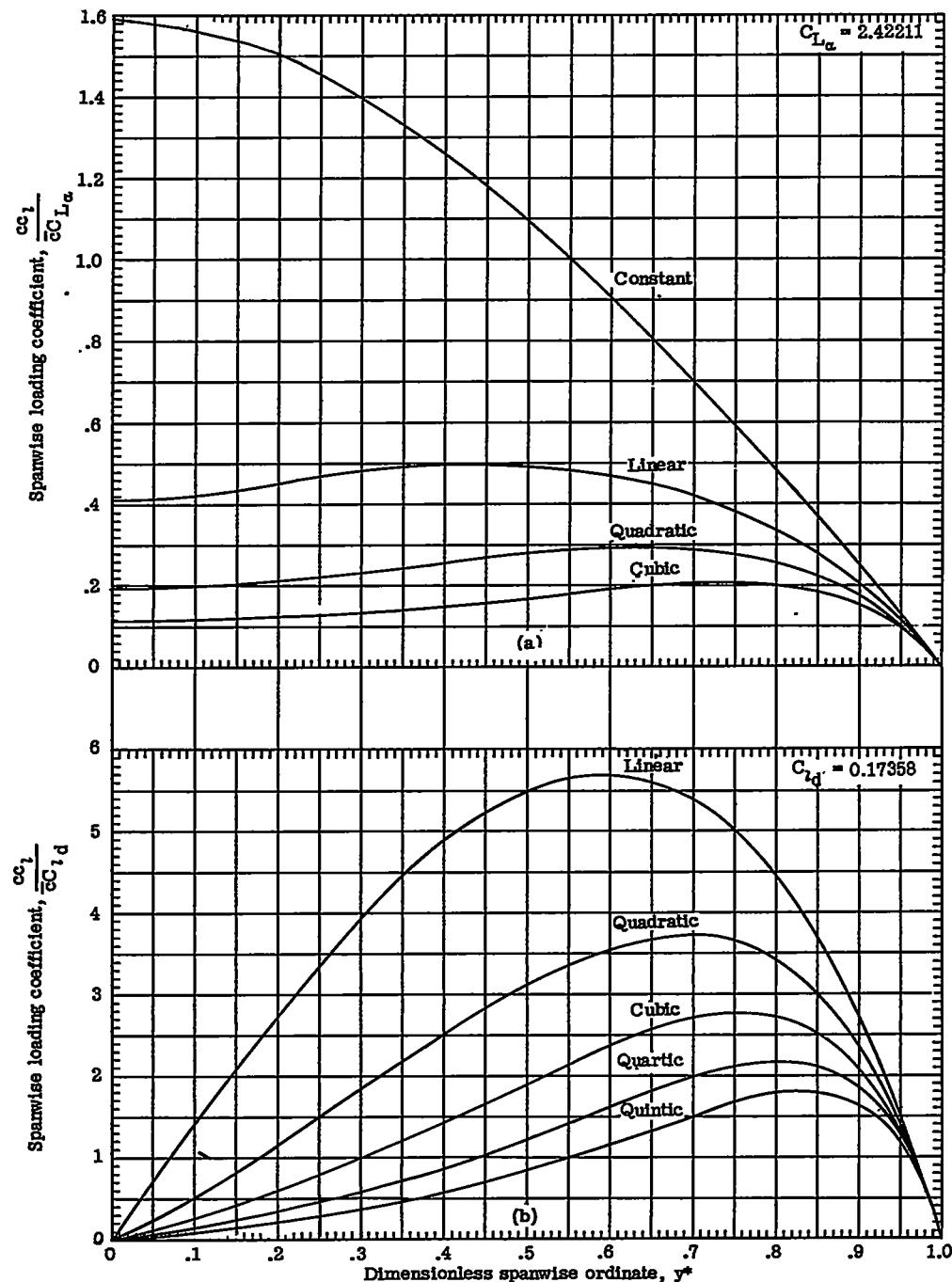
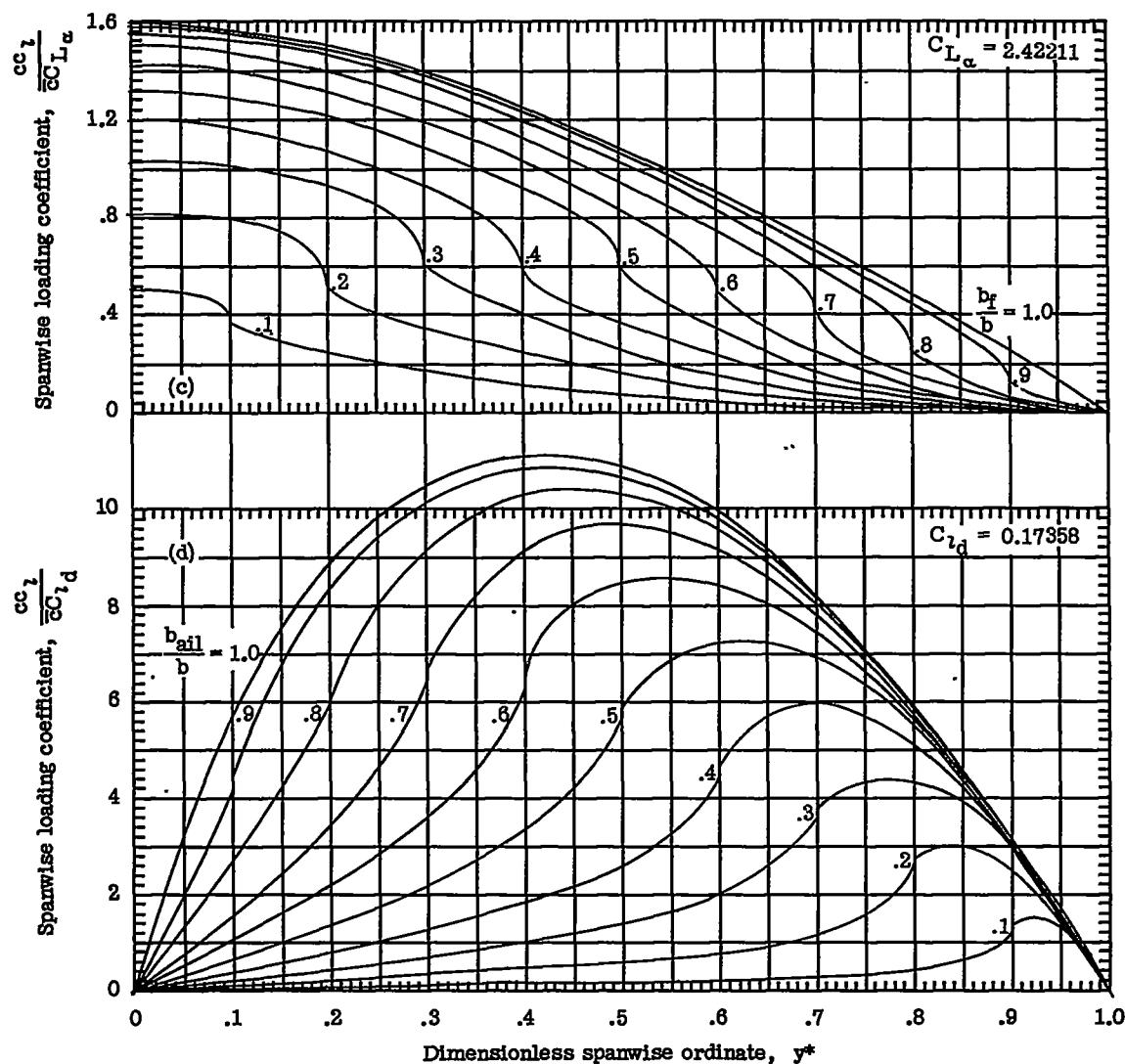


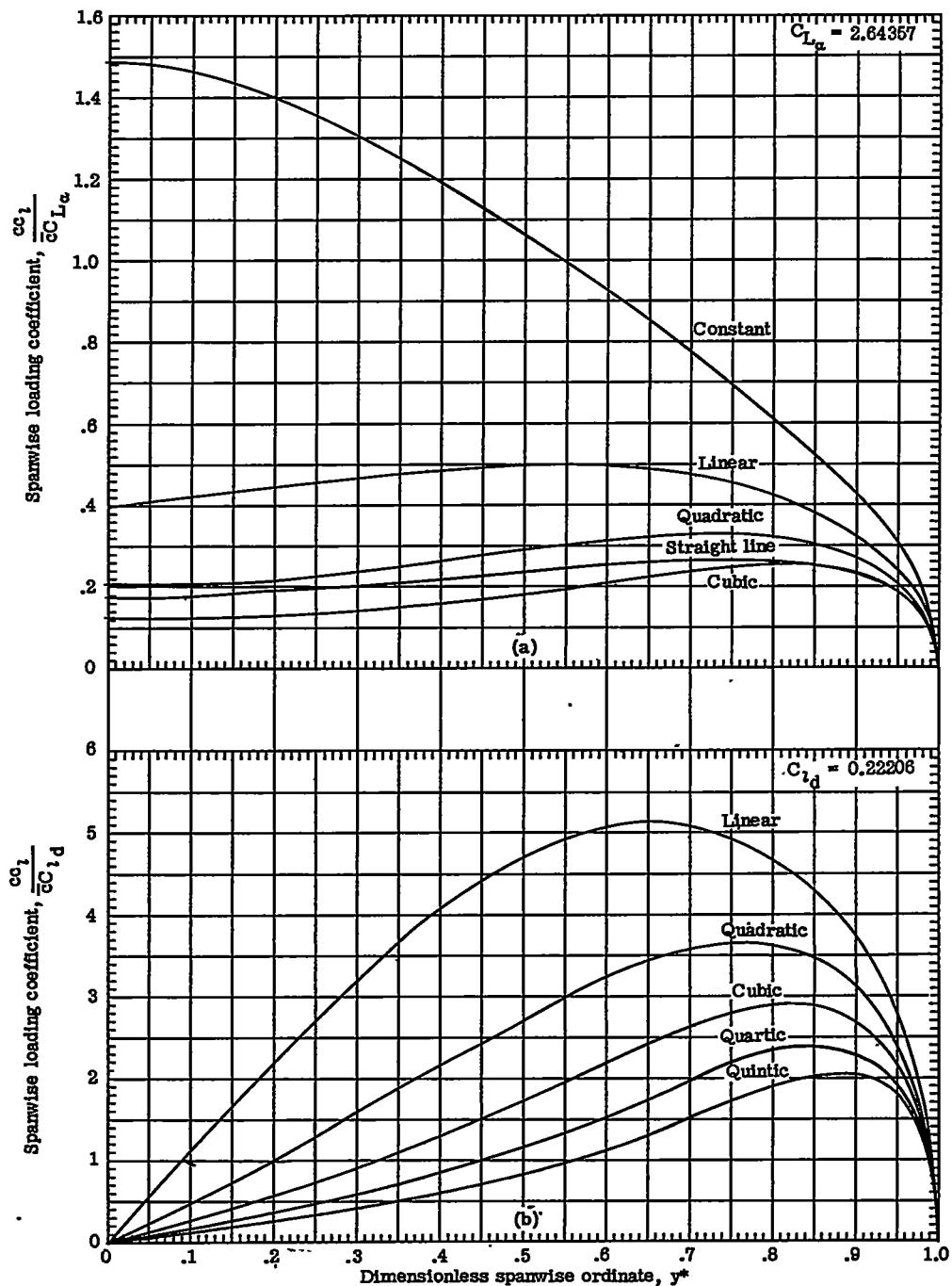
Figure 5.- Spanwise lift distributions for plan form 121 ( $A = 3.0$ ;  $\lambda = 0$ ;  $\Lambda = -45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

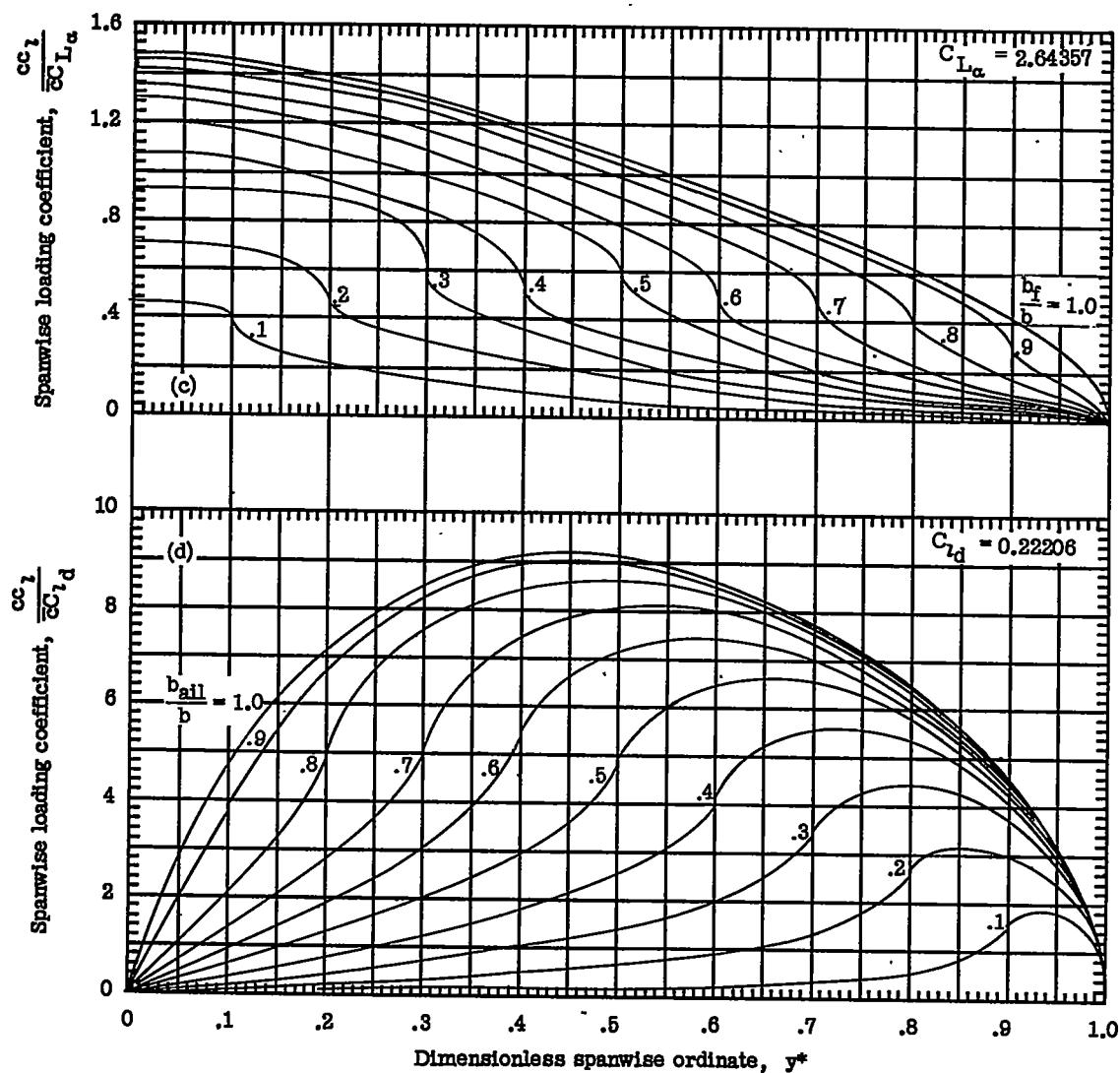
Figure 5.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 6.- Spanwise lift distributions for plan form 122 ( $A = 3.0$ ;  $\lambda = 0.25$ ;  $\Lambda = -45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 6.- Concluded.

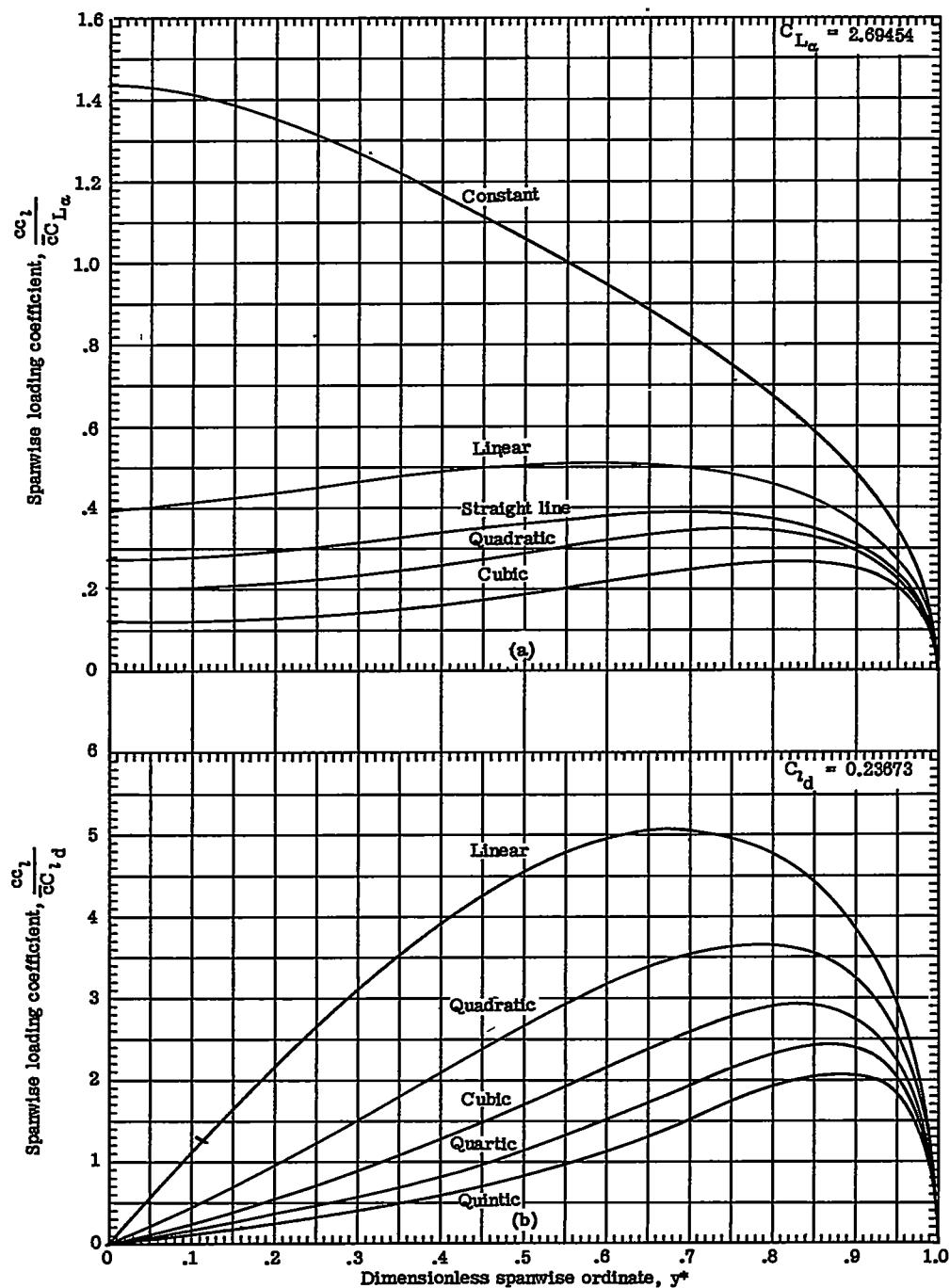
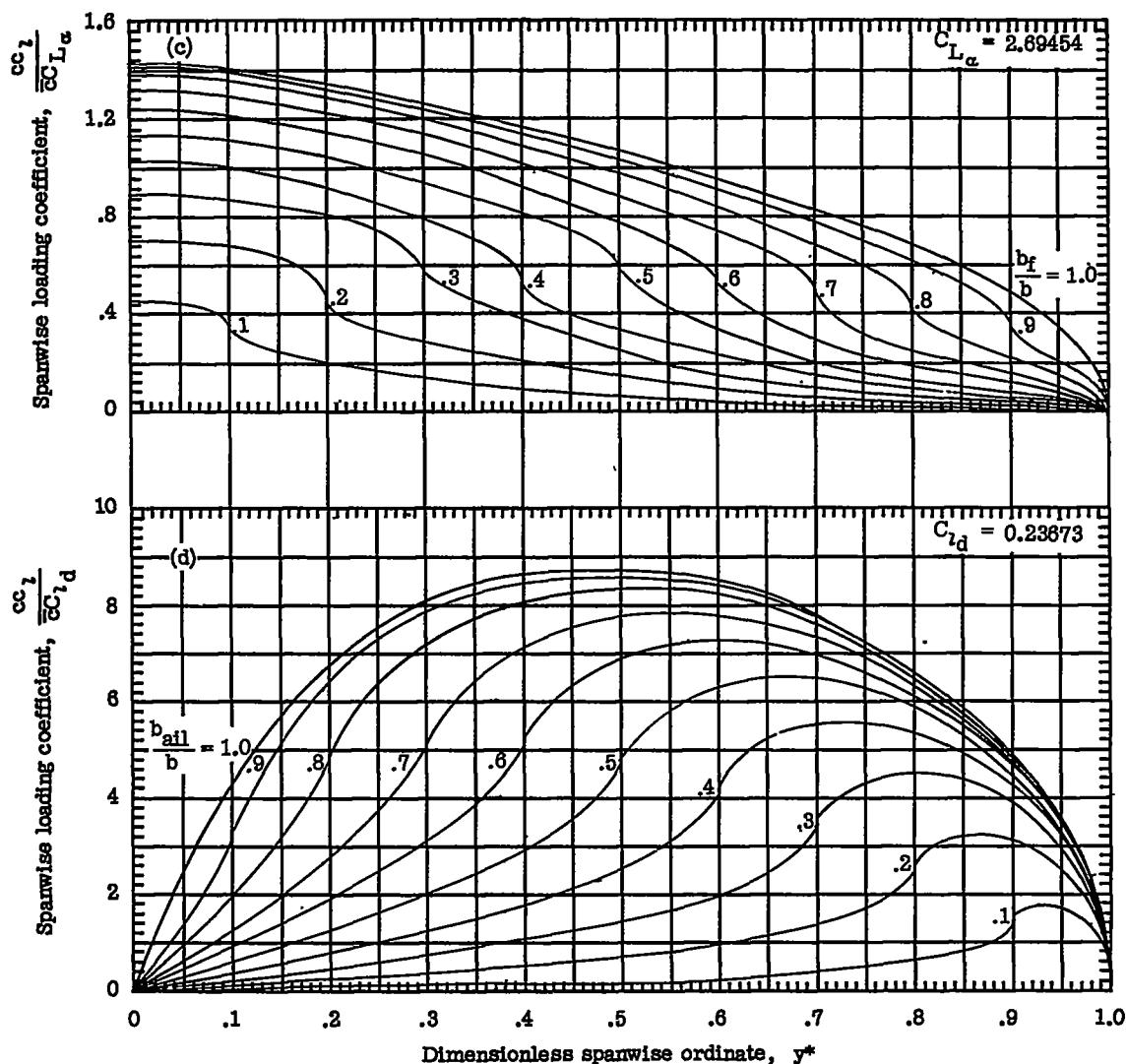


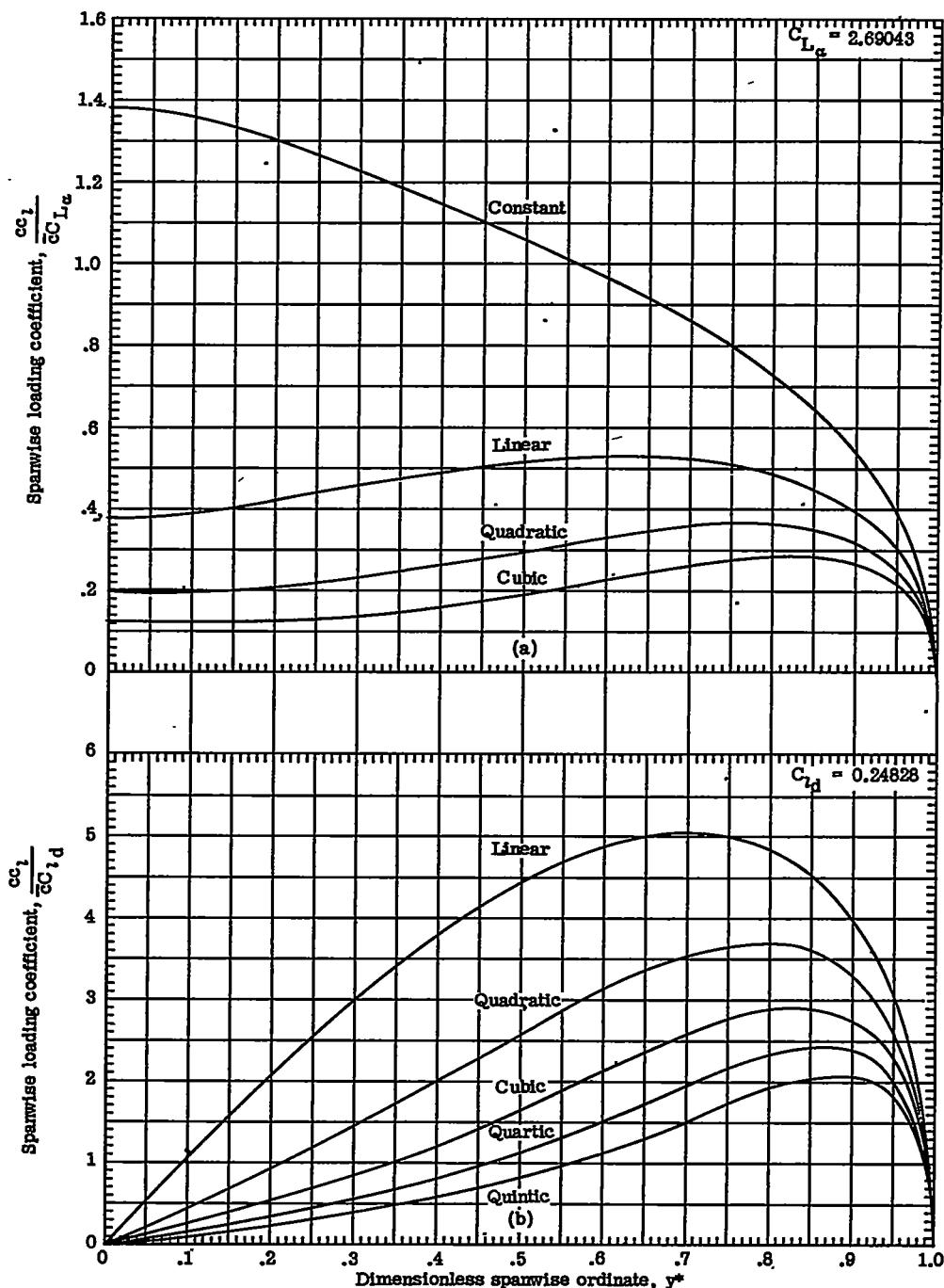
Figure 7-- Spanwise lift distributions for plan form 123 ( $A = 3.0$ ;  $\lambda = 0.50$ ;  $\Lambda = -45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

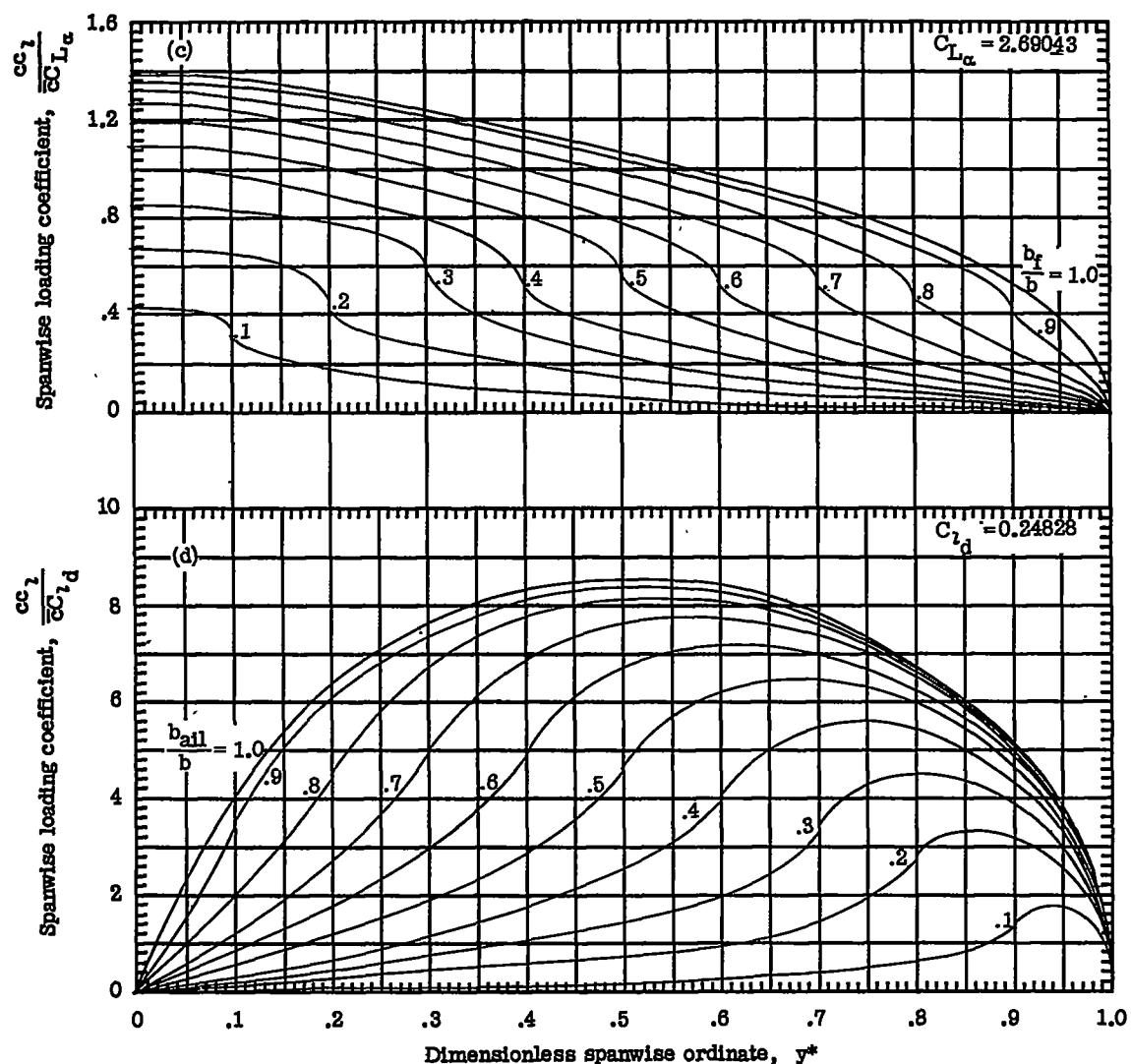
Figure 7:- Concluded.

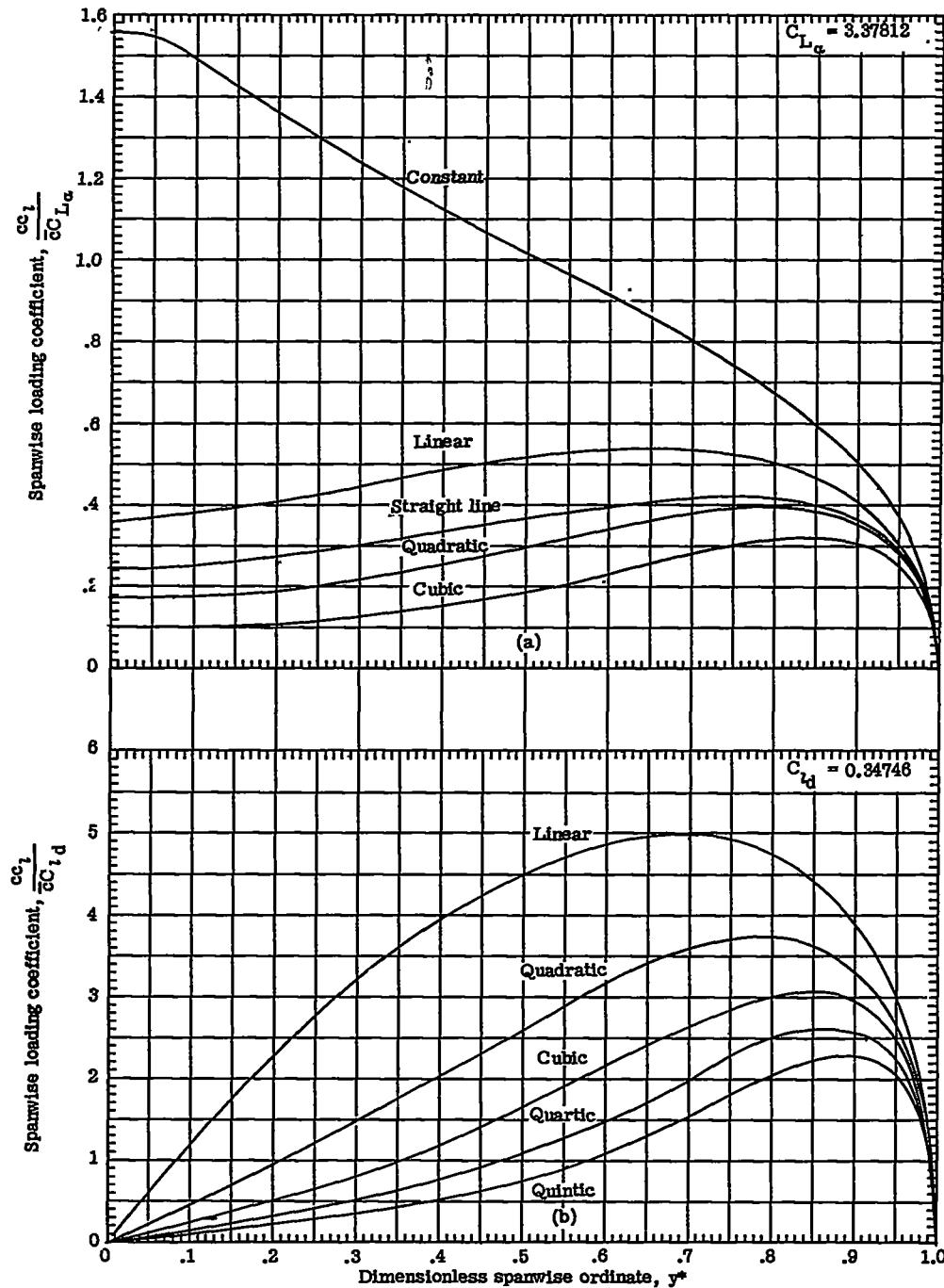


(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 8.- Spanwise lift distributions for plan form 124 ( $A = 3.0$ ;  $\lambda = 1.00$ ;  $\Lambda = -45^\circ$ ).

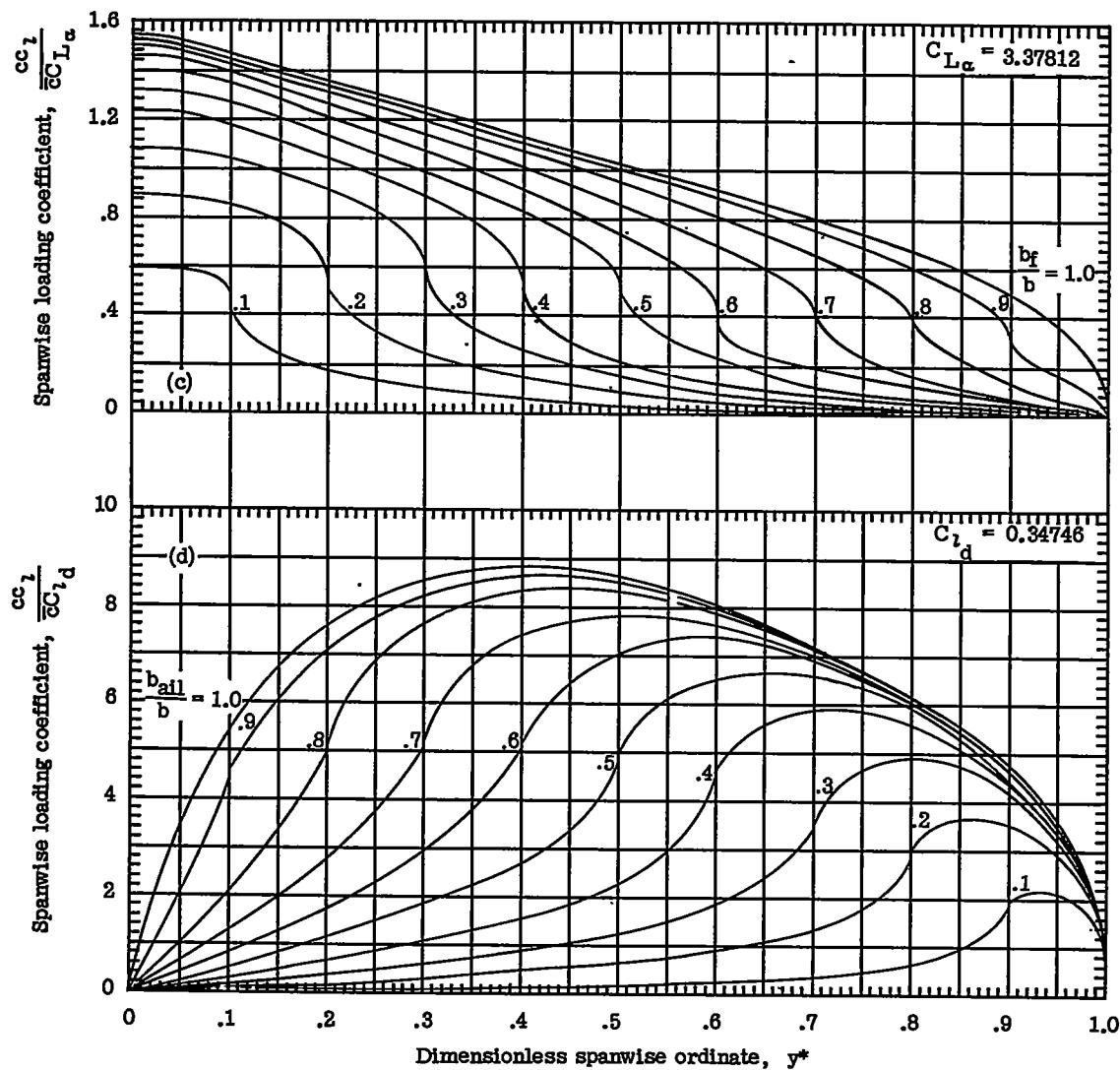




(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 9.- Spanwise lift distributions for plan form 133 ( $A = 6.0$ ;  $\lambda = 0.50$ ;  $\Lambda \approx -45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 9.- Concluded.

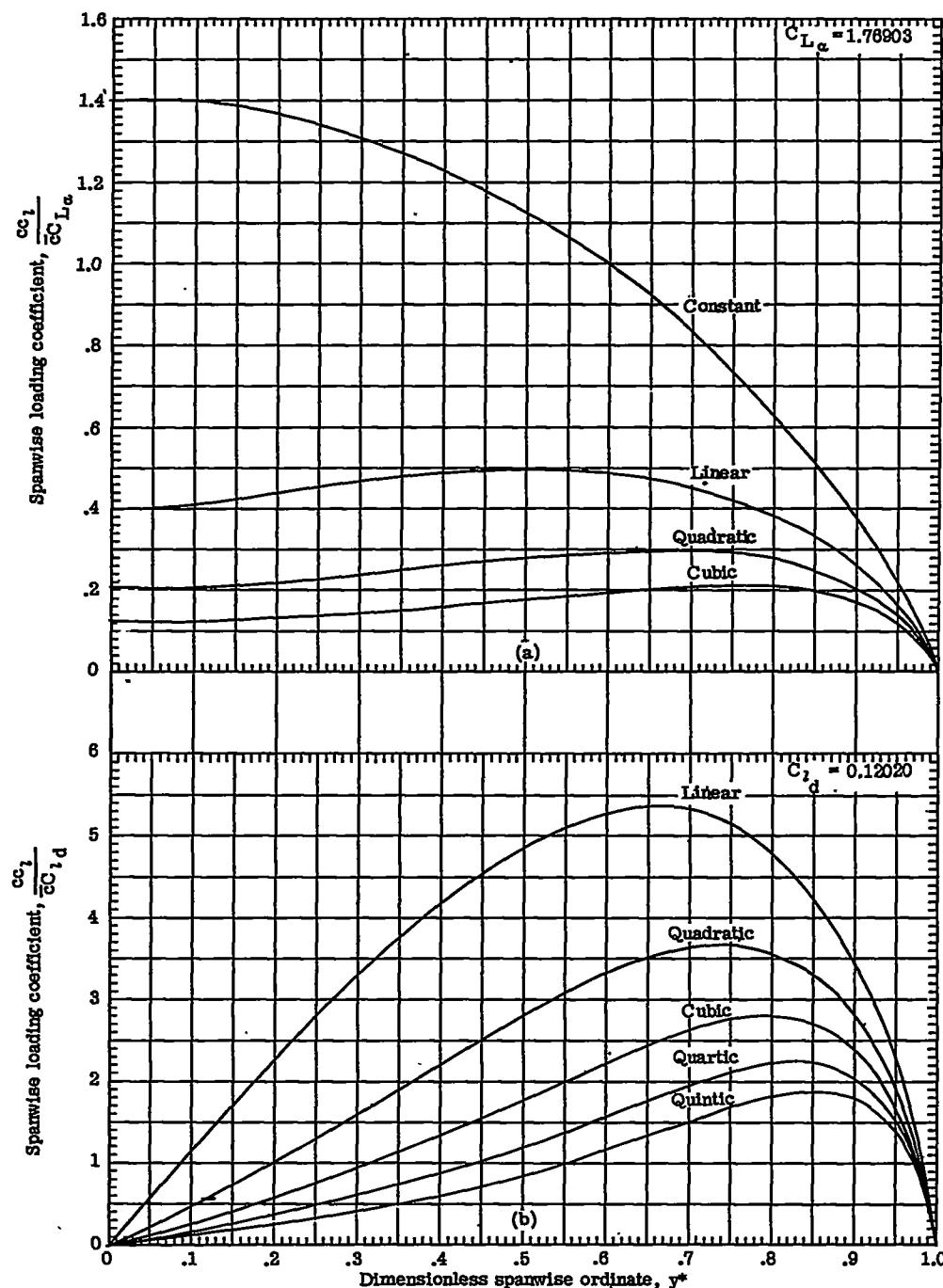
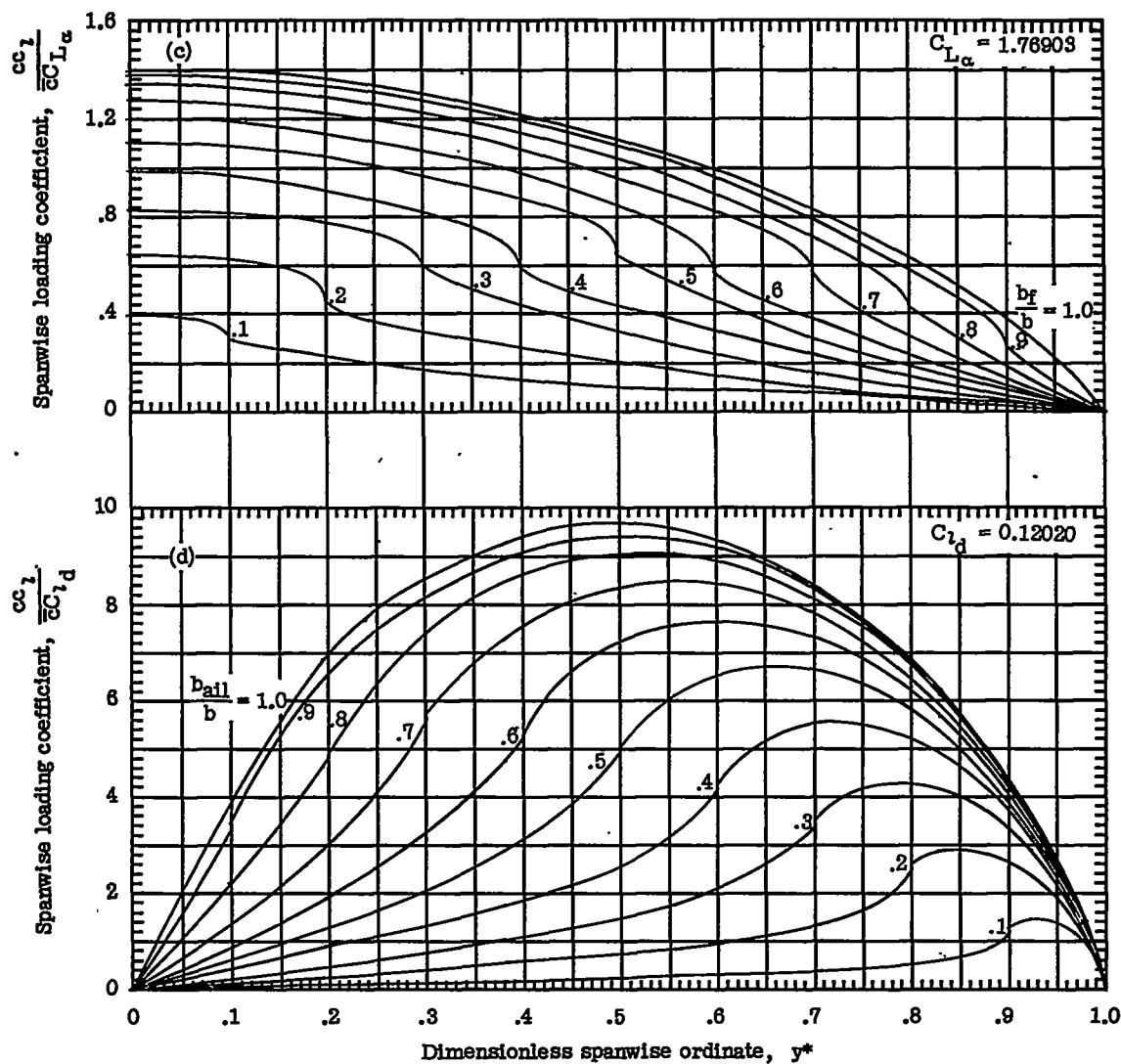


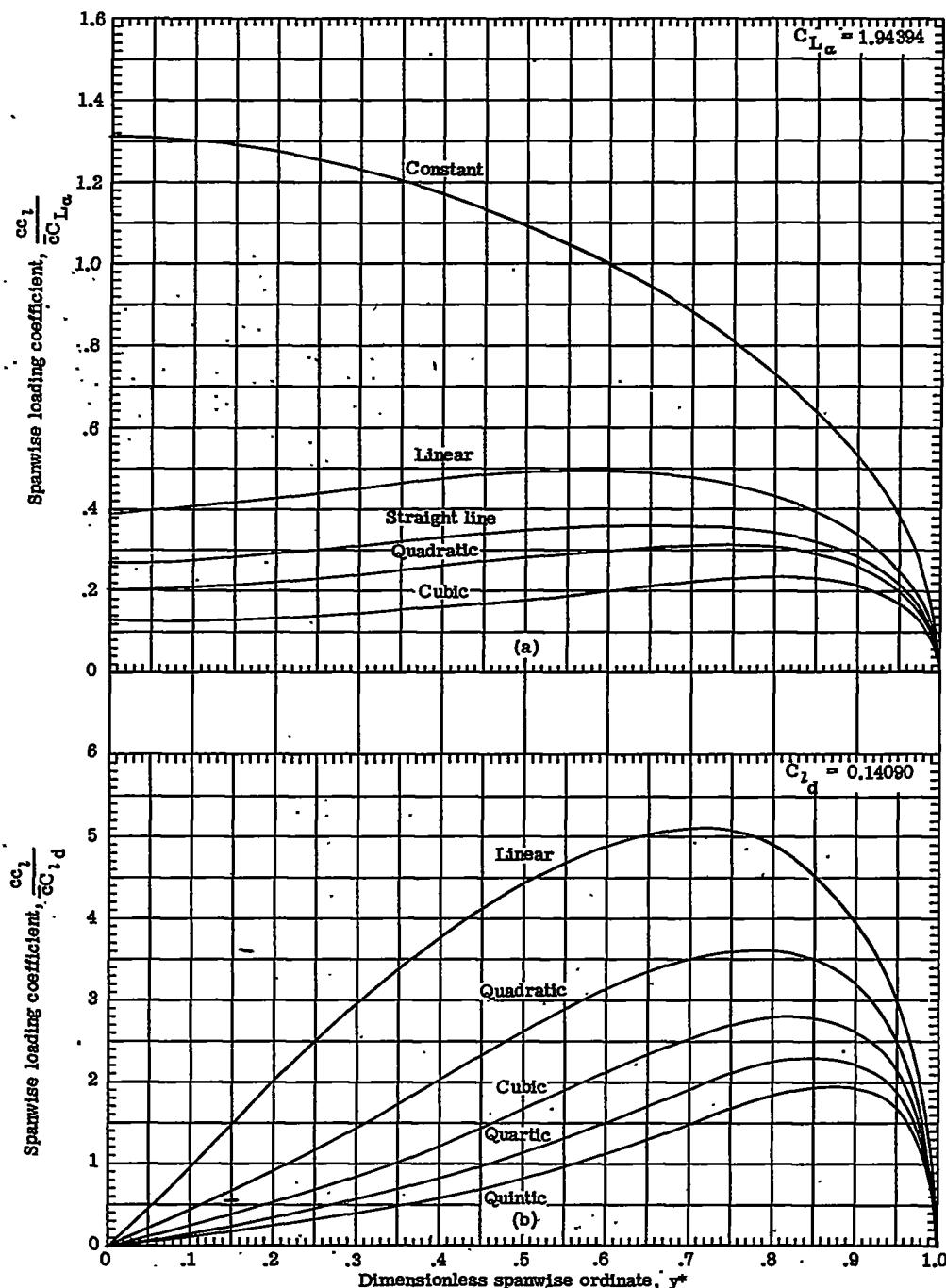
Figure 10.- Spanwise lift distributions for plan form 211 ( $A = 1.5$ ;  $\lambda = 0$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 10.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 11.- Spanwise lift distributions for plan form 213 ( $A = 1.5$ ;  
 $\lambda = 0.50$ ;  $\Lambda = -30^\circ$ ).

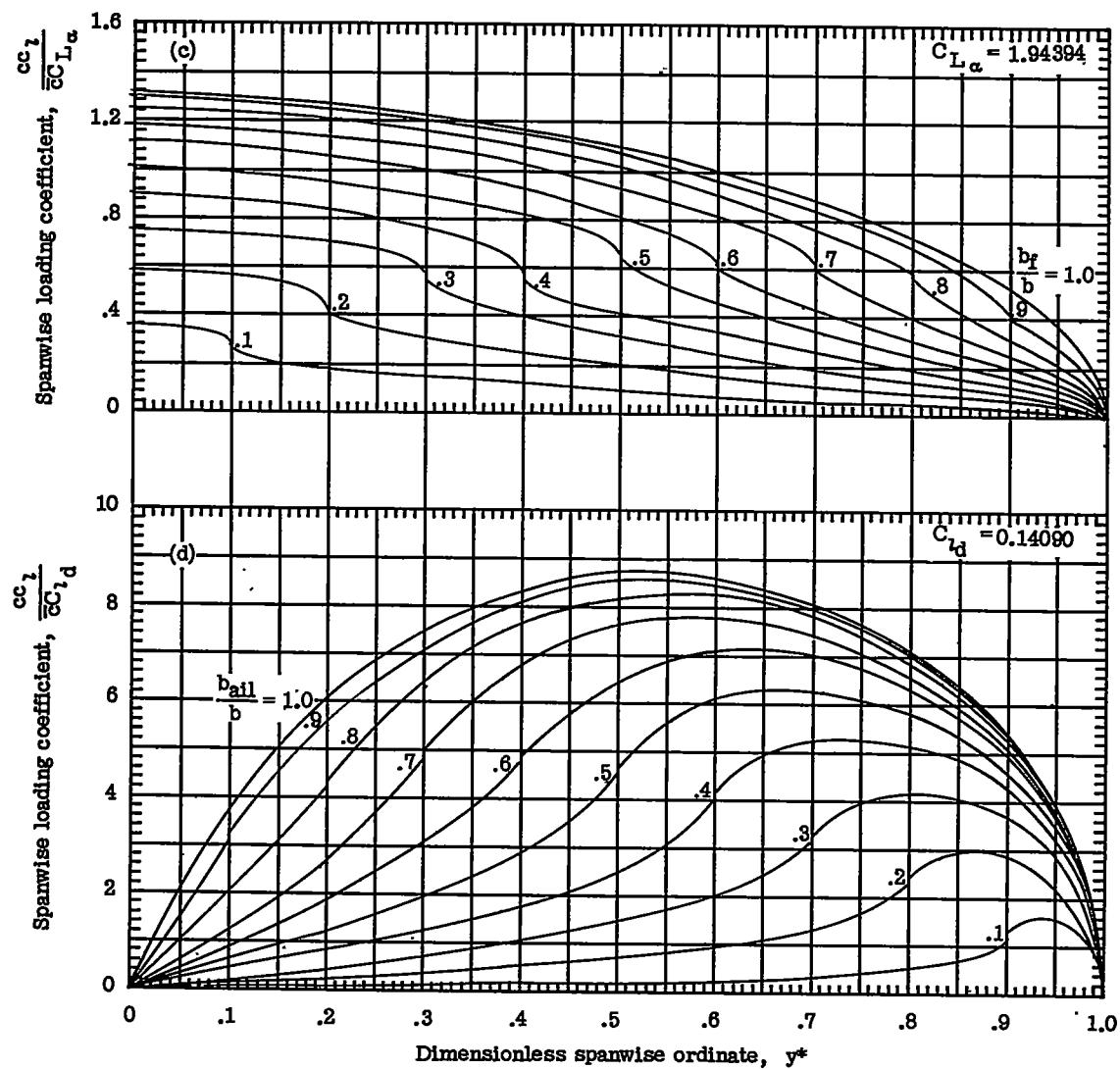
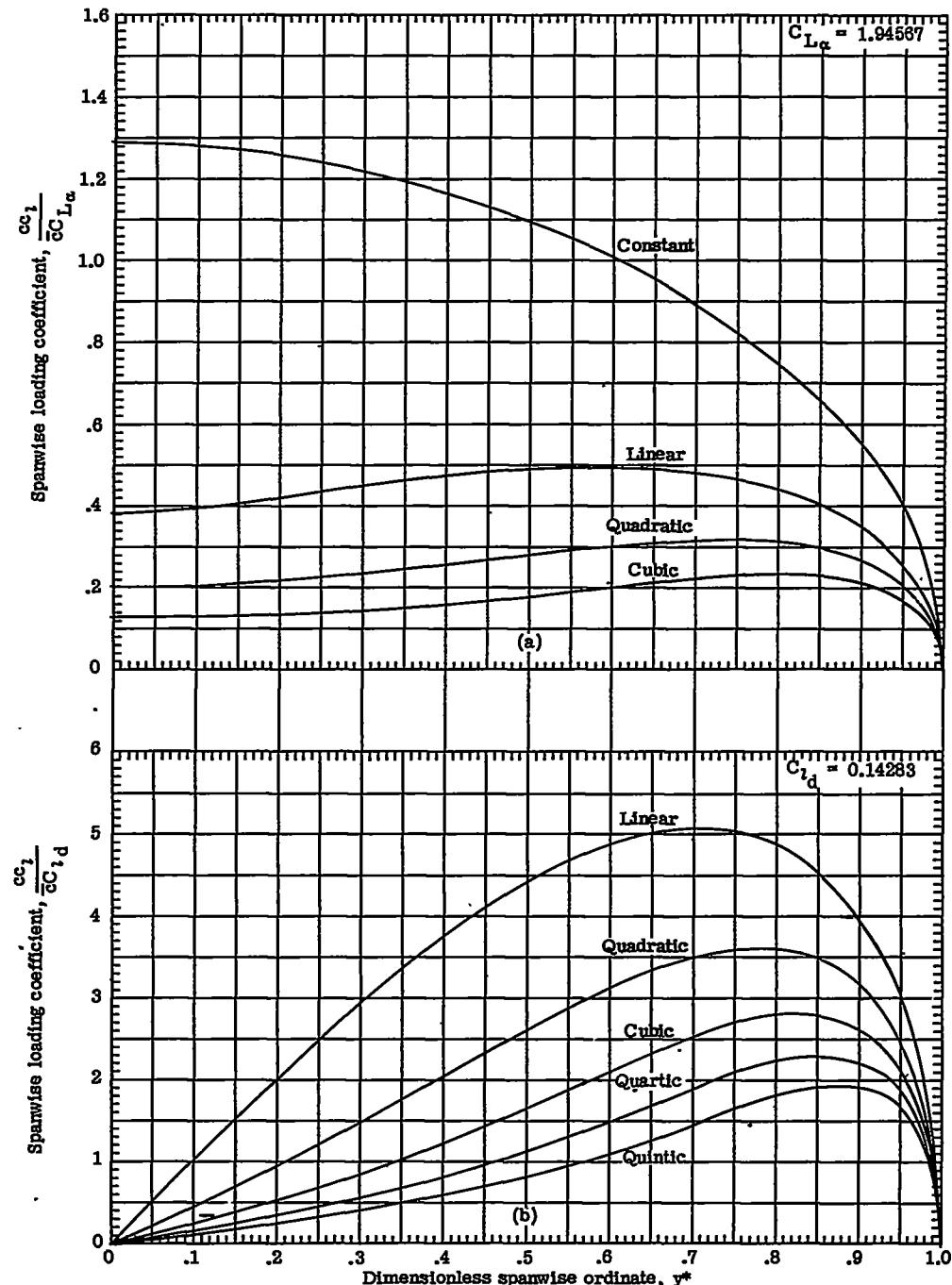


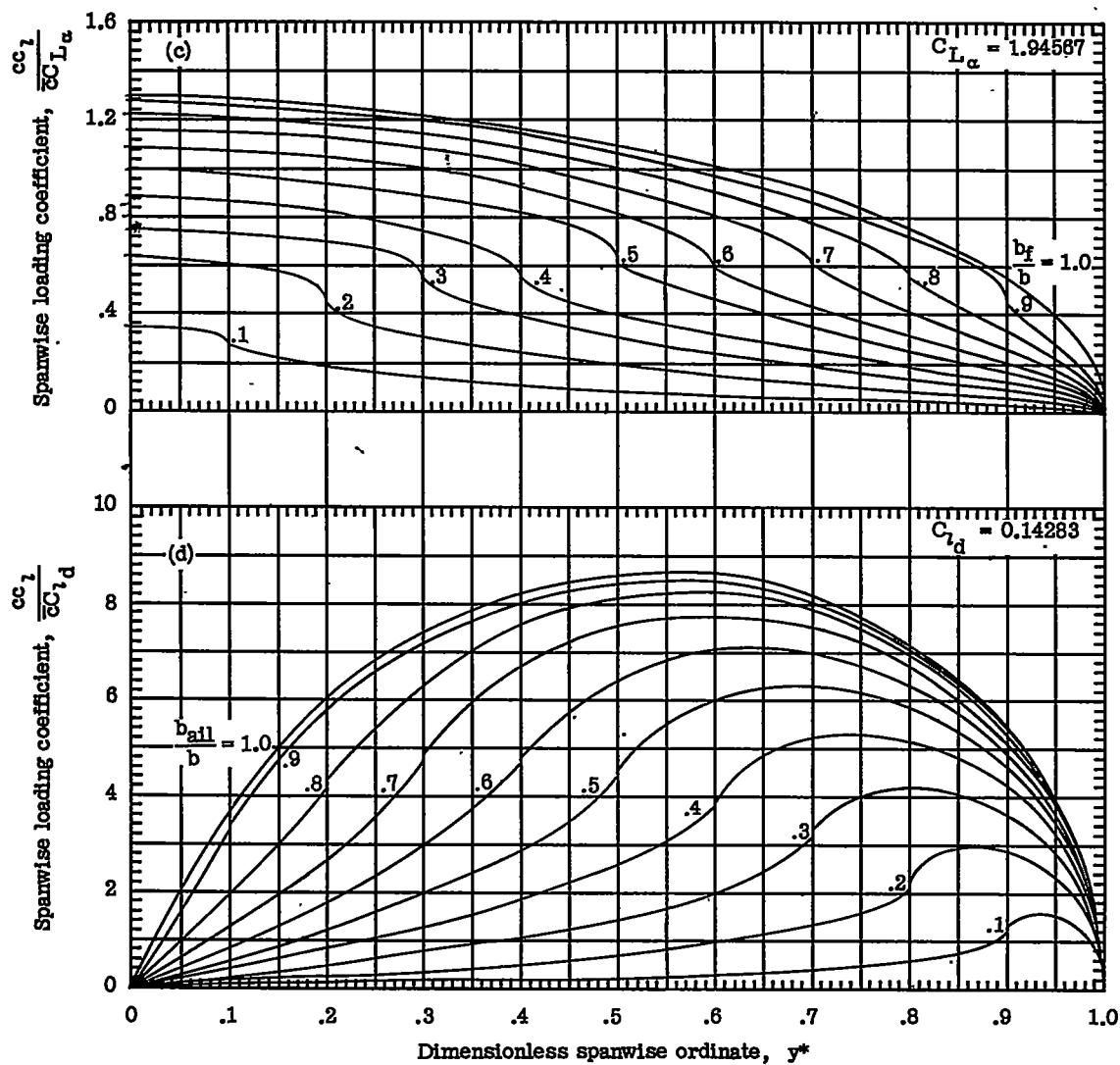
Figure 11.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

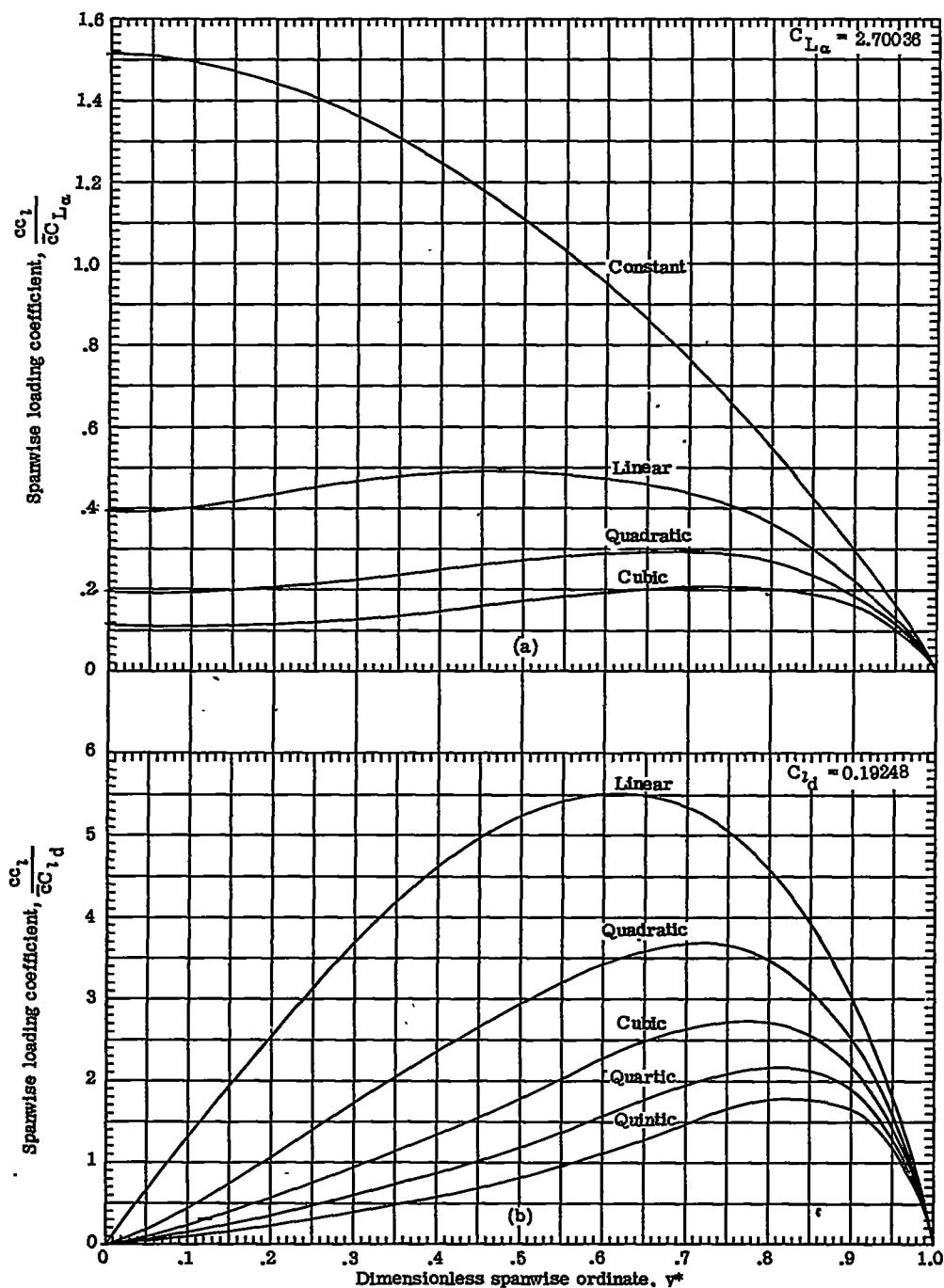
Figure 12.- Spanwise lift distributions for plan form 214 ( $A = 1.5$ ;  $\lambda = 1.00$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 12.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 13.-- Spanwise lift distributions for plan form 221 ( $A = 30$ ;  $\lambda = 0$ ;  $\Lambda = -30^\circ$ ).

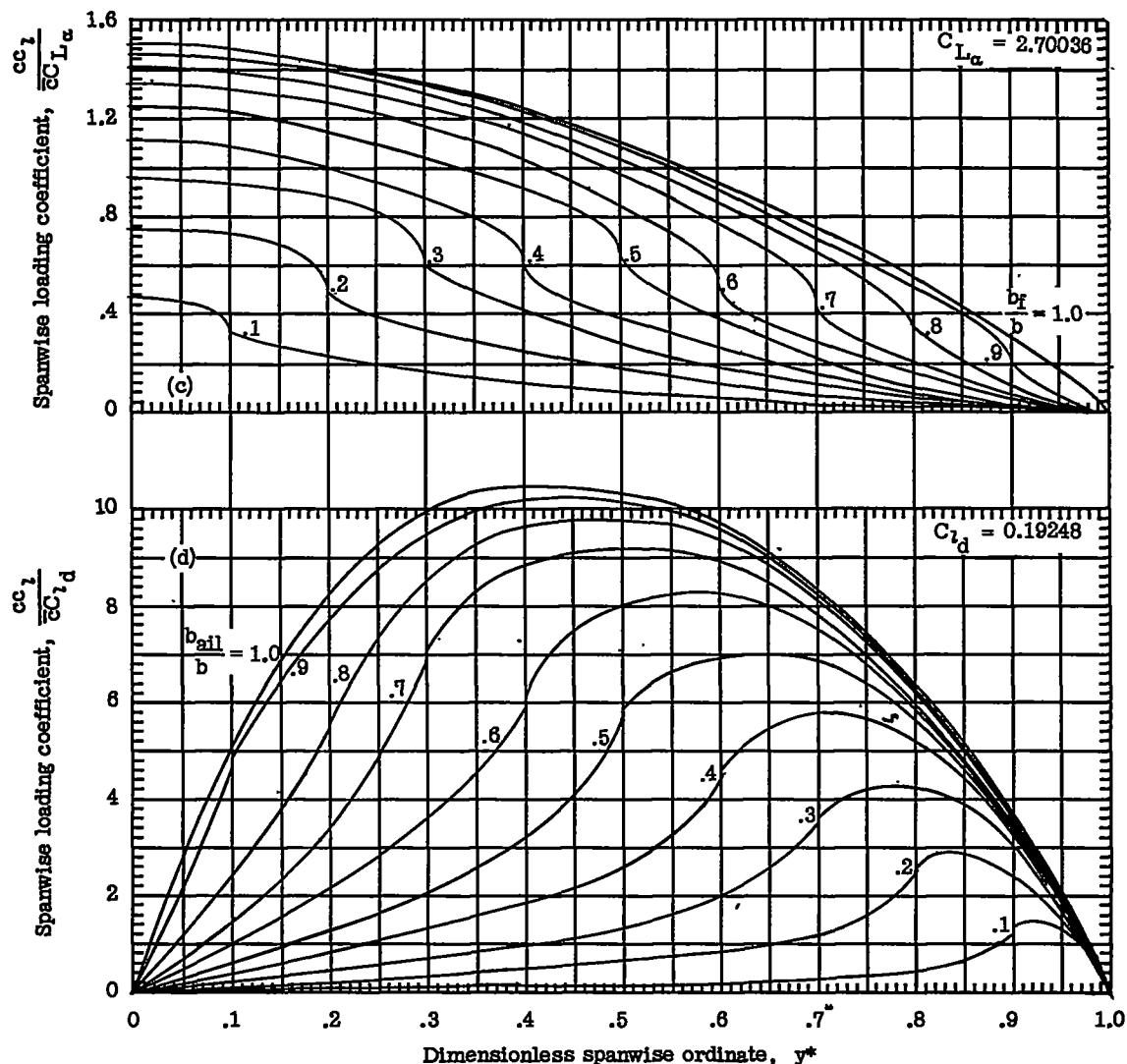
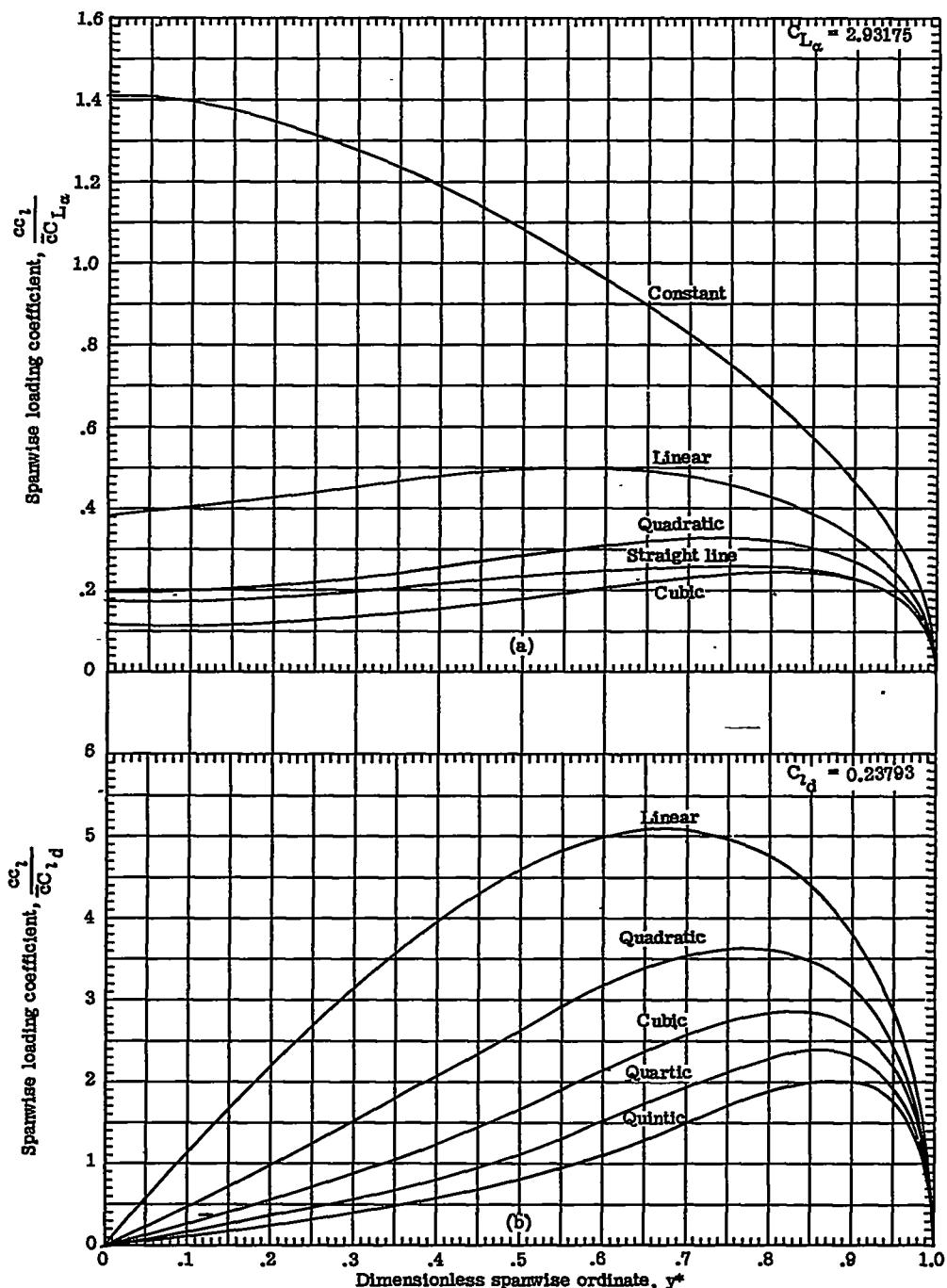


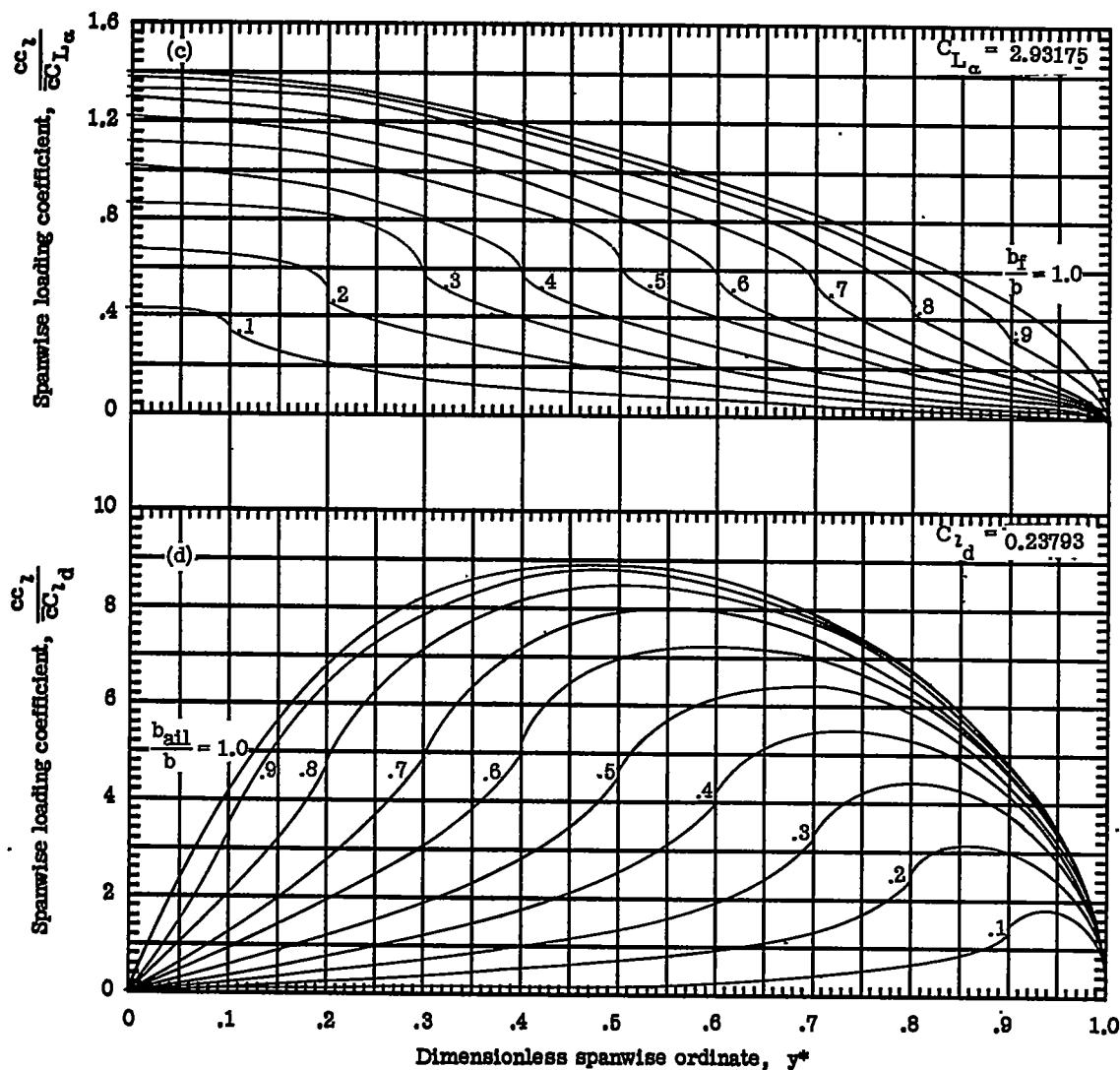
Figure 13.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

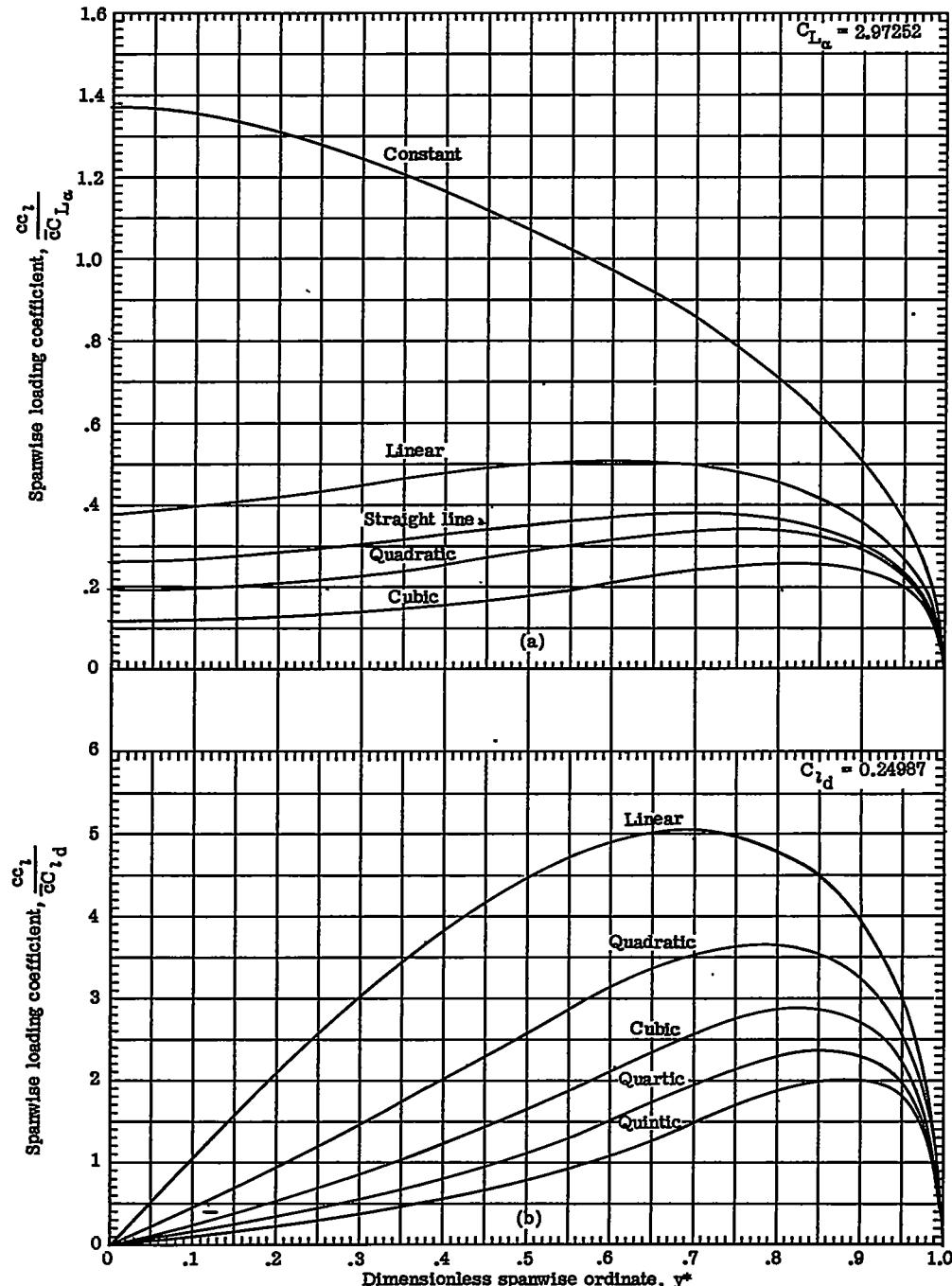
Figure 14.- Spanwise lift distributions for plan form 222 ( $A = 3.0$ ;  
 $\lambda = 0.25$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

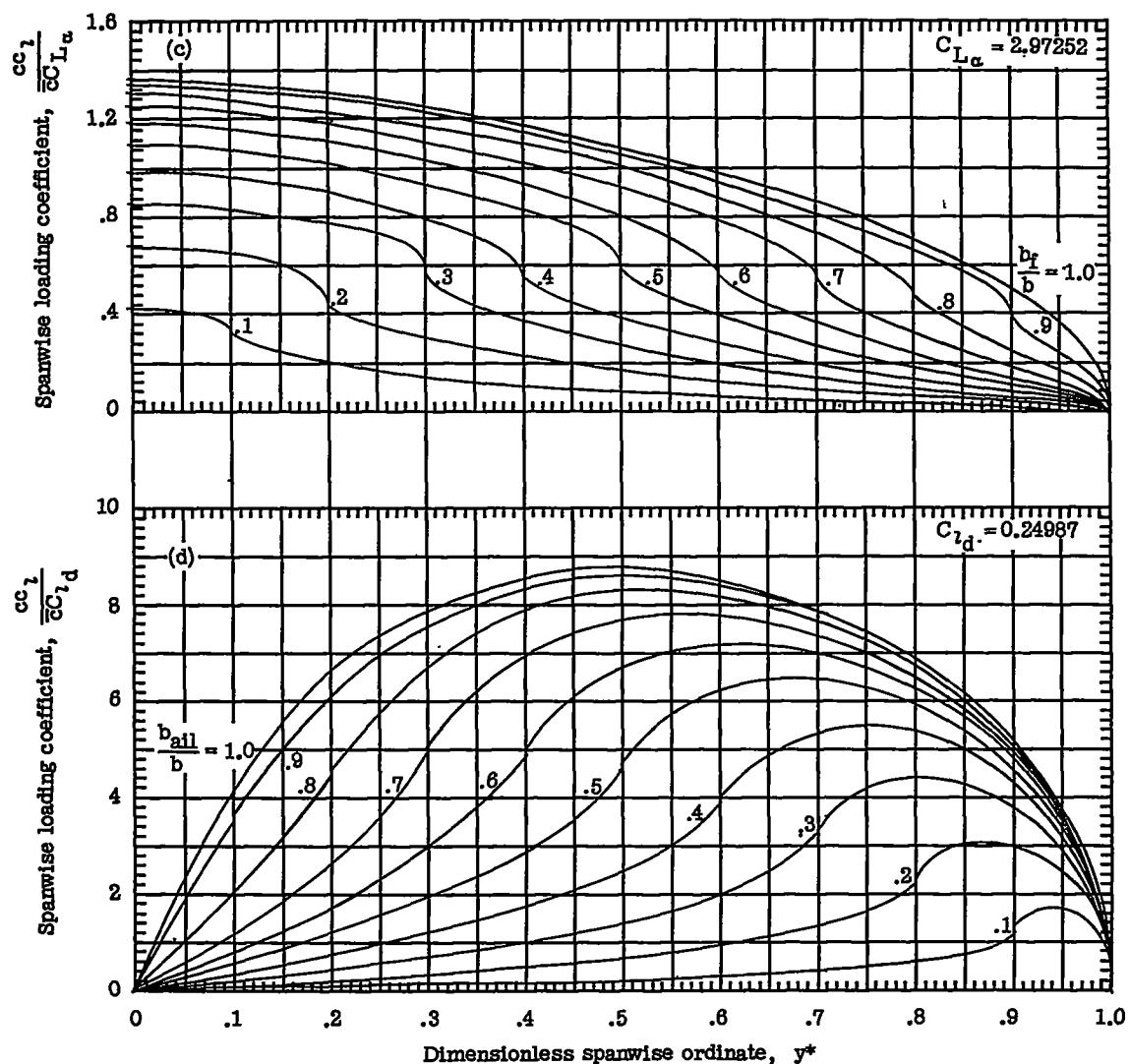
Figure 14.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

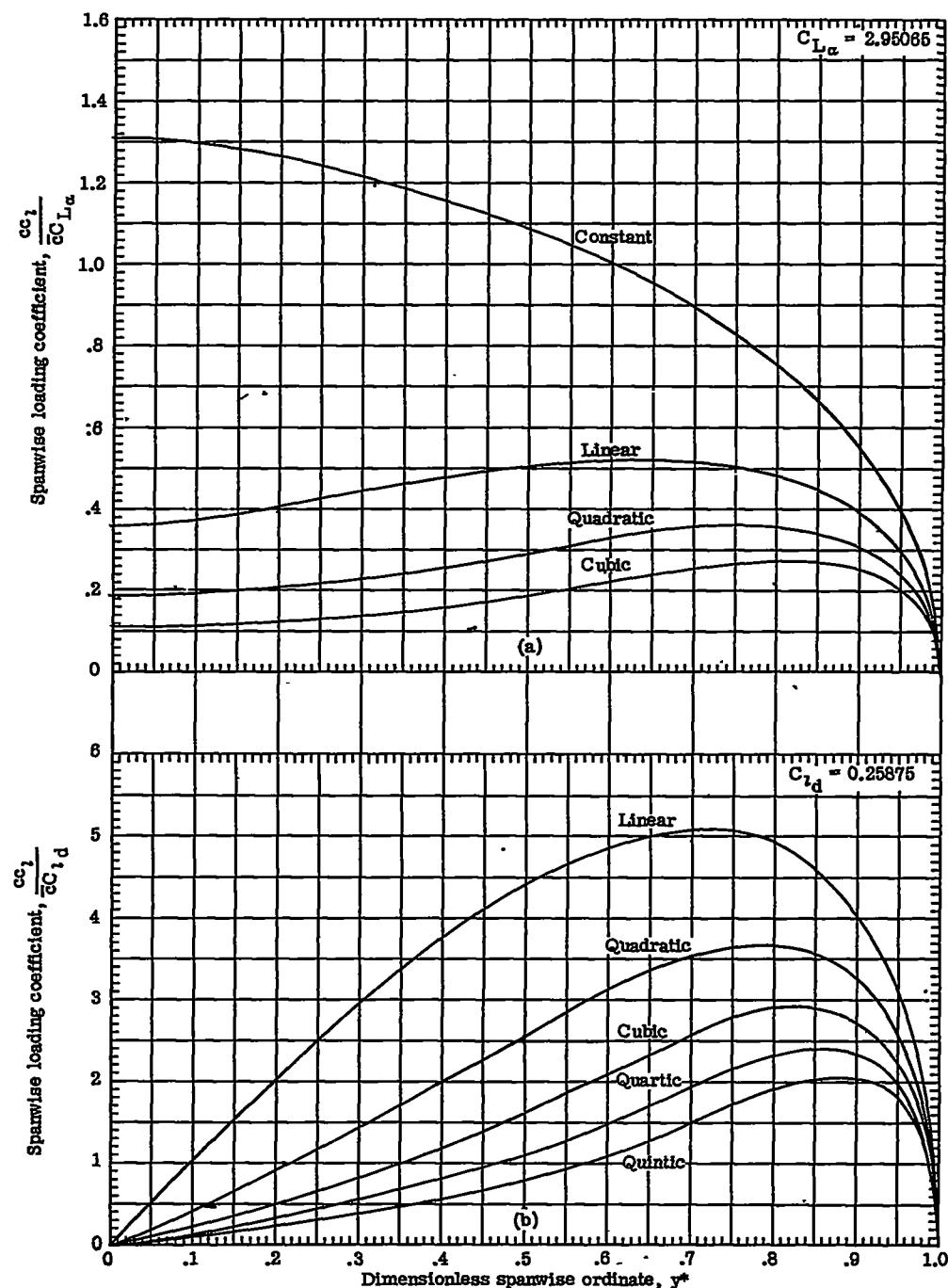
Figure 15.- Spanwise lift distributions for plan form 223 ( $A = 3.0$ ;  $\lambda = 0.50$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 15.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 16.- Spanwise lift distributions for plan form 224 ( $A = 3.0$ ;  
 $\lambda = 1.00$ ;  $\Lambda = -30^\circ$ ).

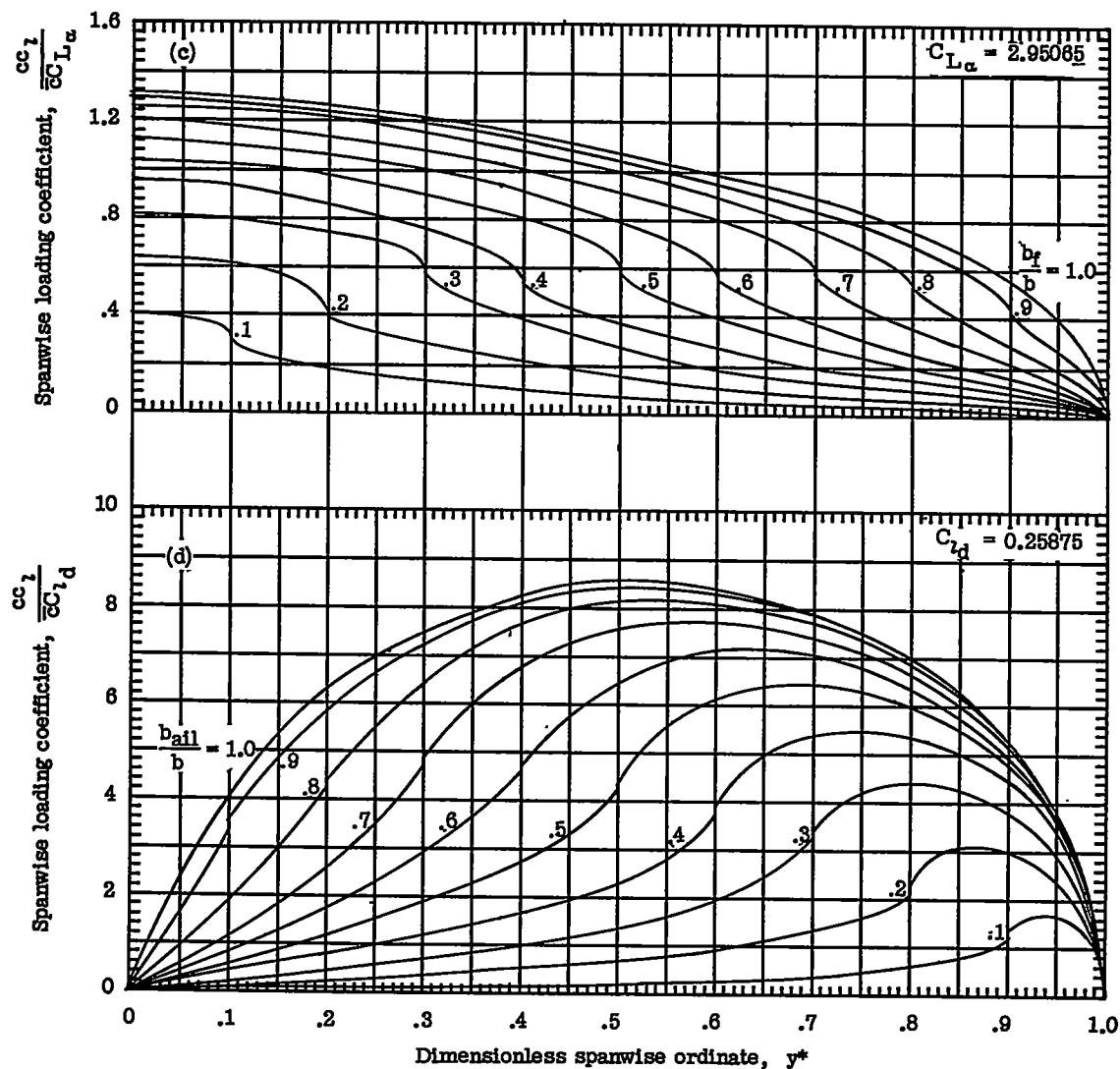
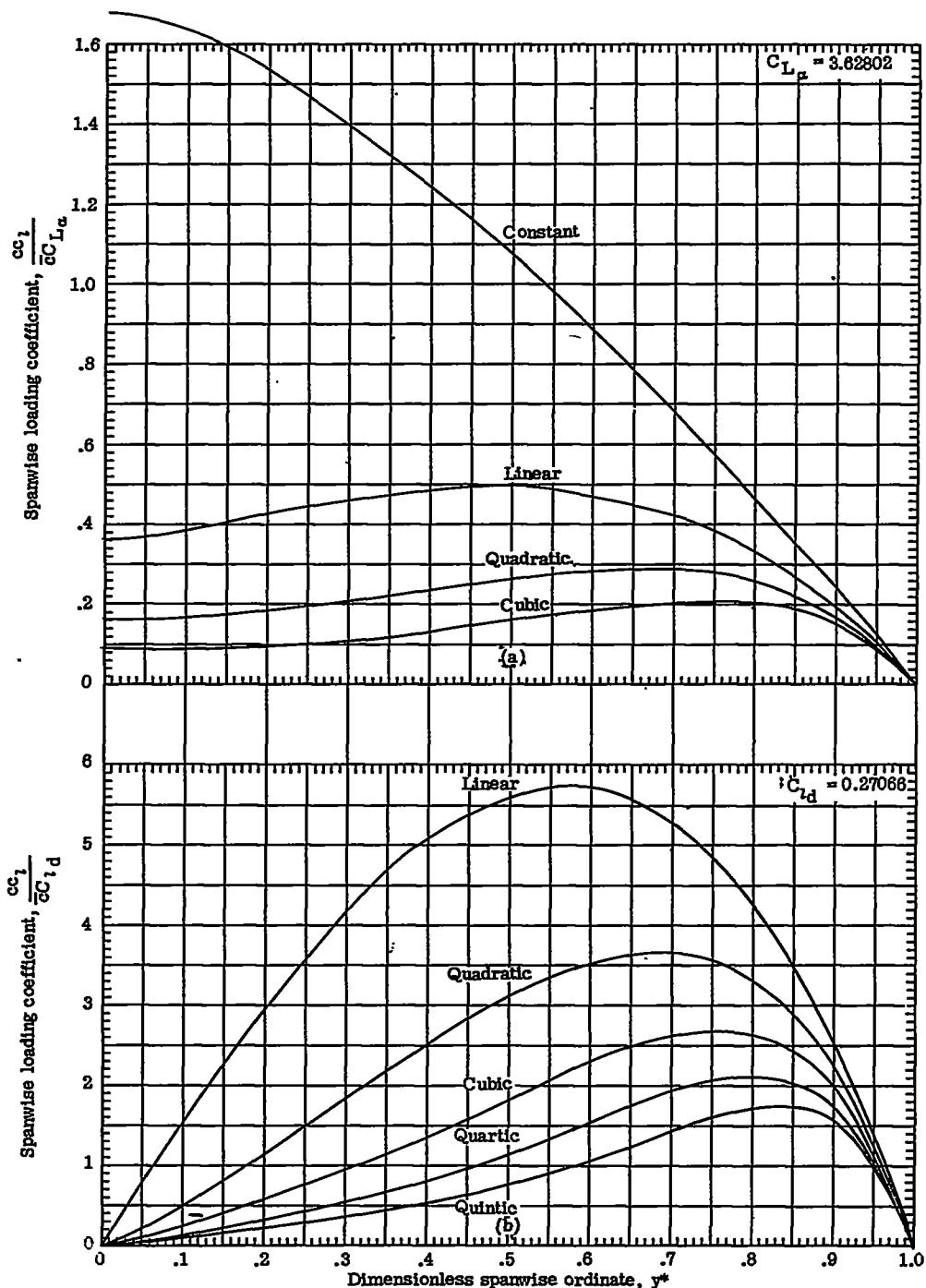


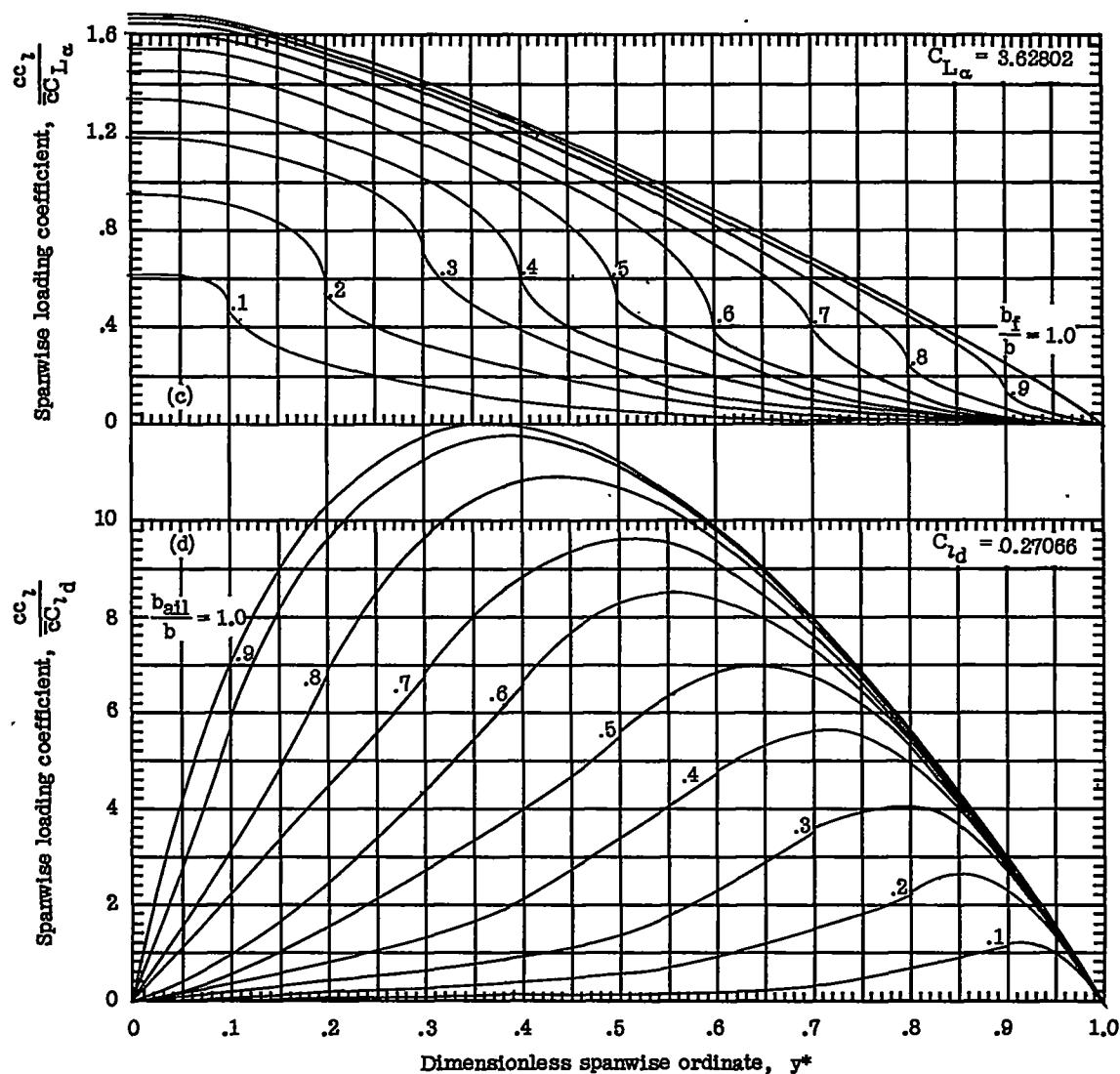
Figure 16.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

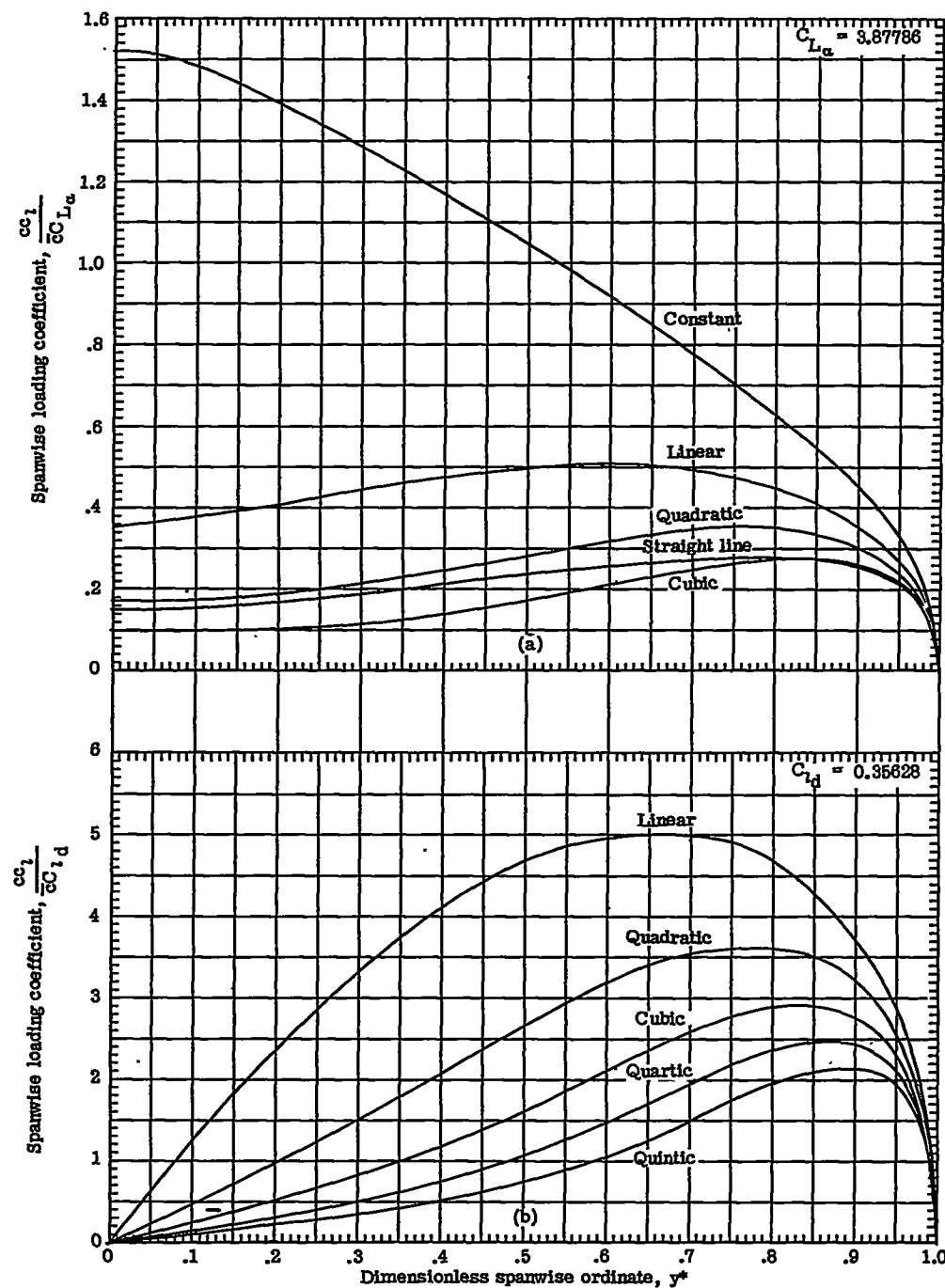
Figure 17.- Spanwise lift distributions for plan form 231 ( $A = 6.0$ ;  
 $\lambda = 0$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

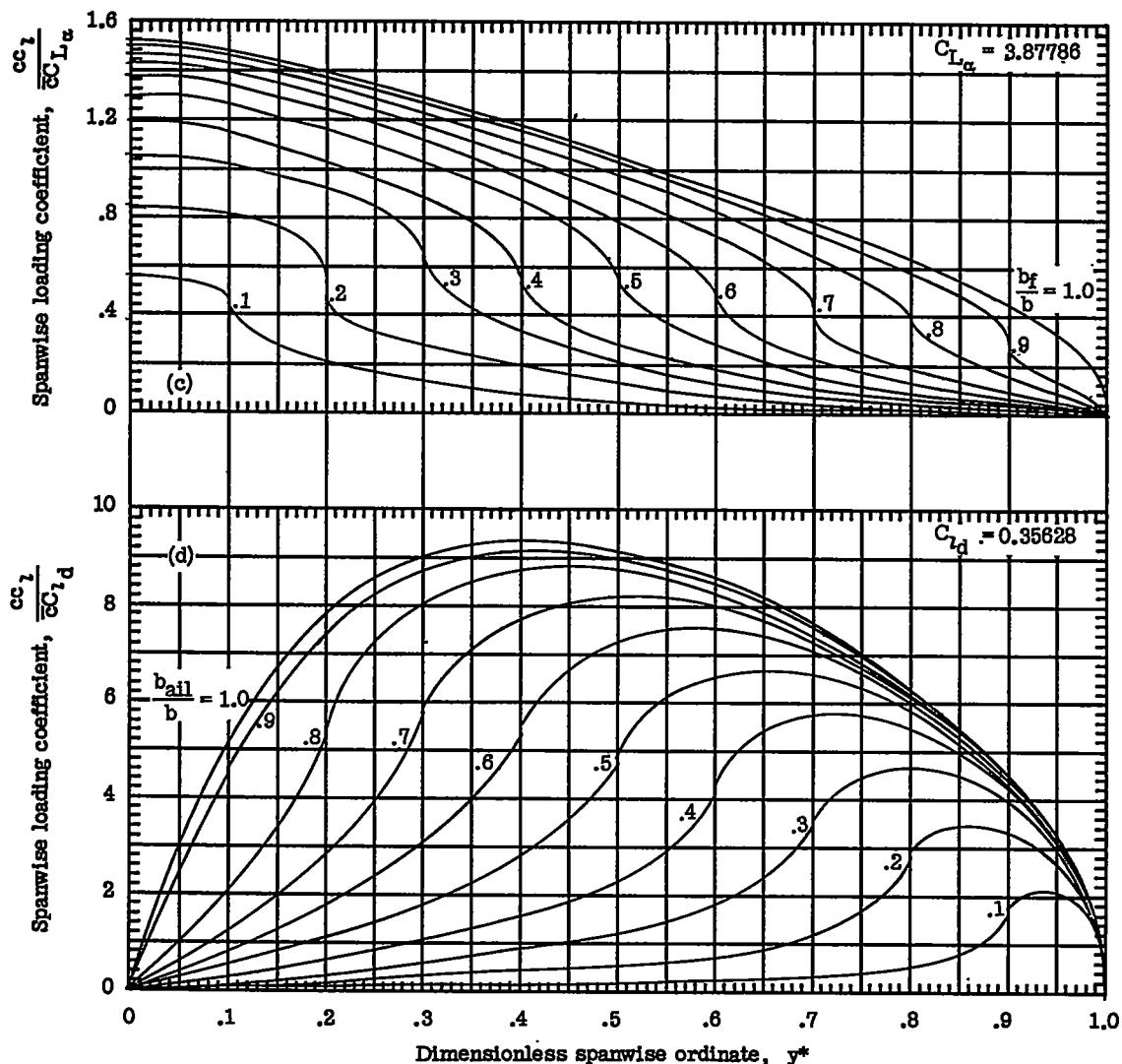
Figure 17.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 18.- Spanwise lift distributions for plan form 232 ( $A = 6.0$ ;  $\lambda = 0.25$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 18.- Concluded.

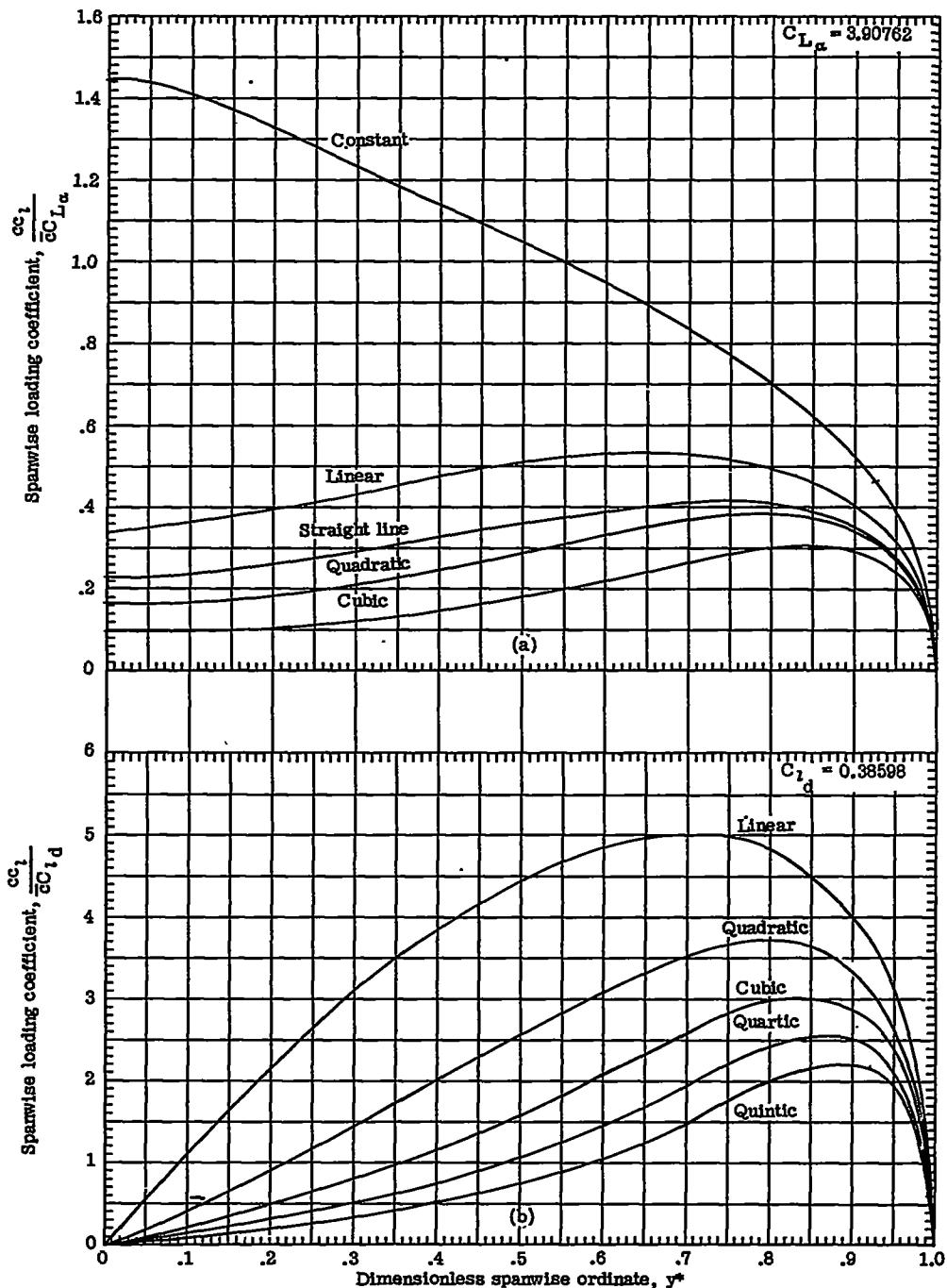
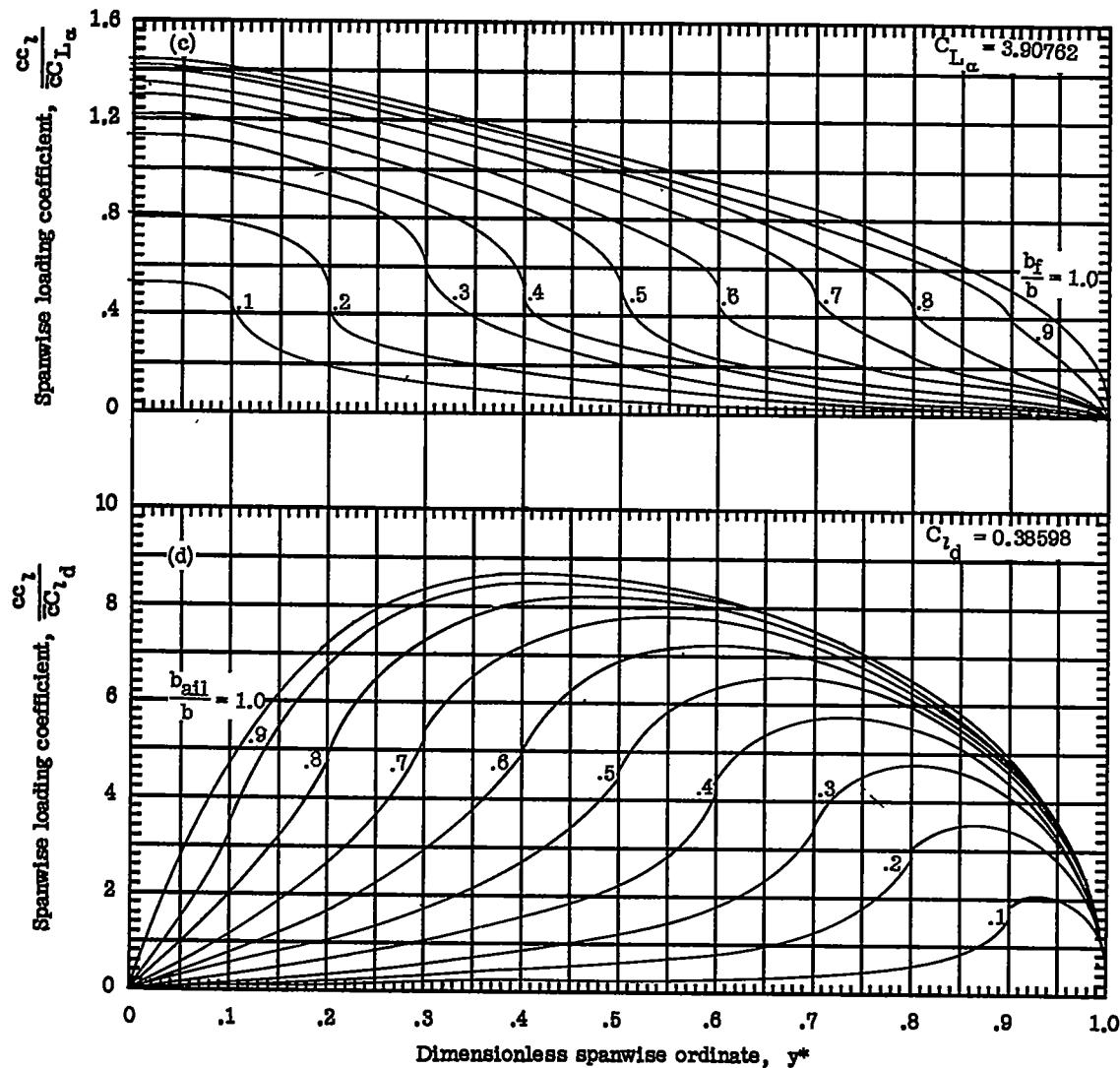


Figure 19.- Spanwise lift distributions for plan form 233 ( $A = 6.0$ ;  $\lambda = 0.50$ ;  $\Lambda = -30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 19.- Concluded.

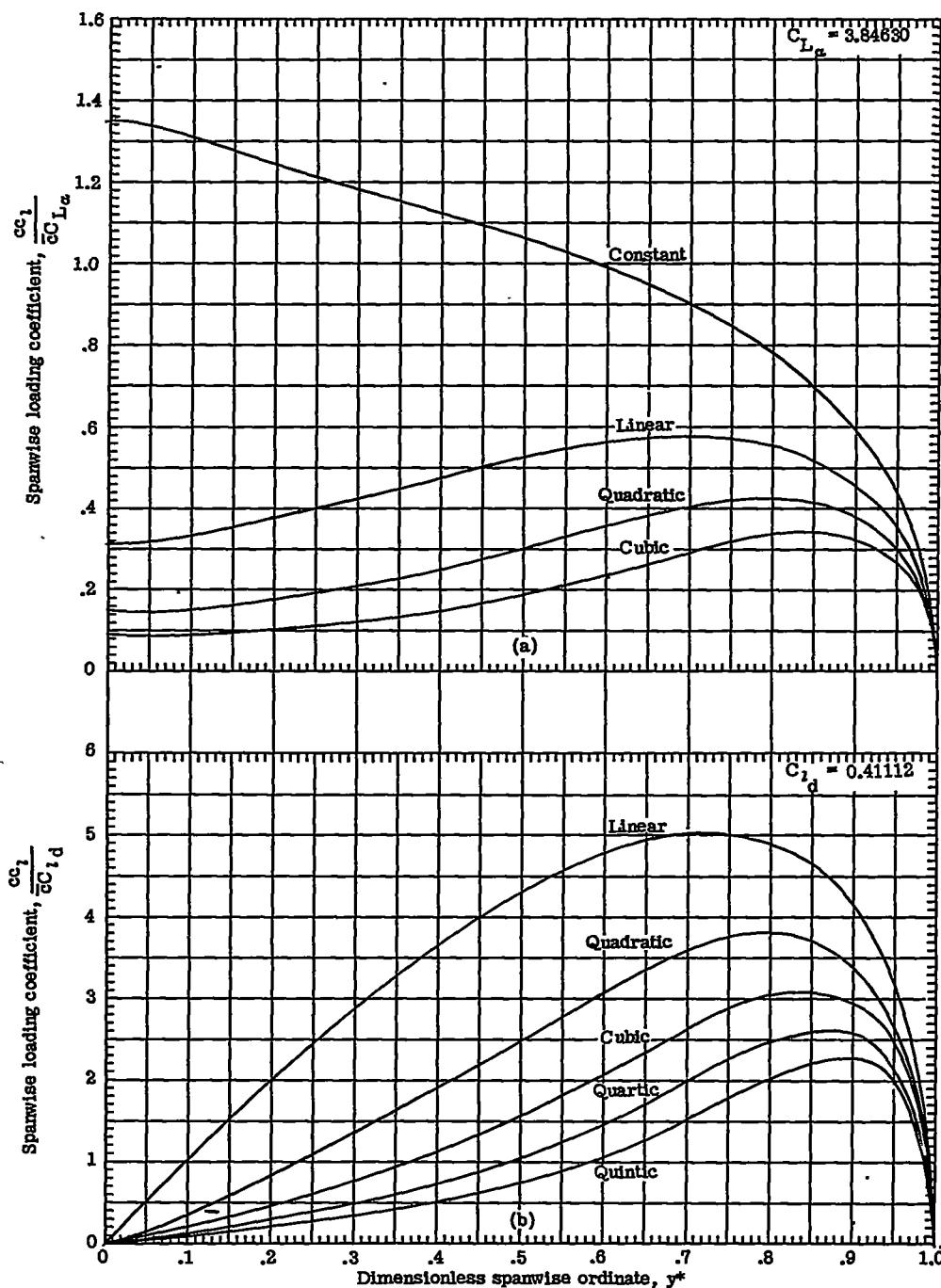


Figure 20.- Spanwise lift distributions for plan form 234 ( $A = 6.0$ ;  $\lambda = 1.00$ ;  $\Lambda = -30^\circ$ ).

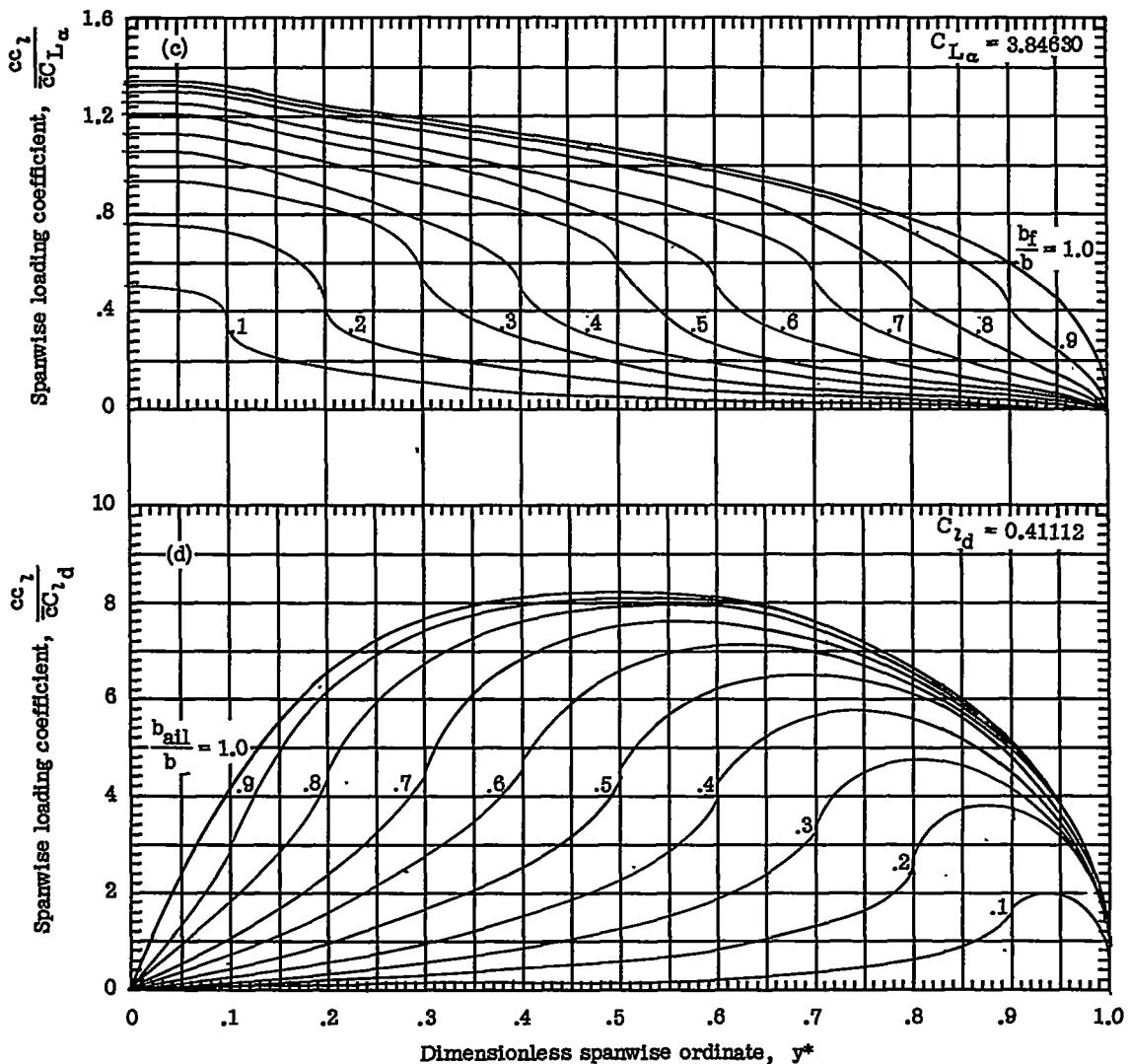


Figure 20.- Concluded.

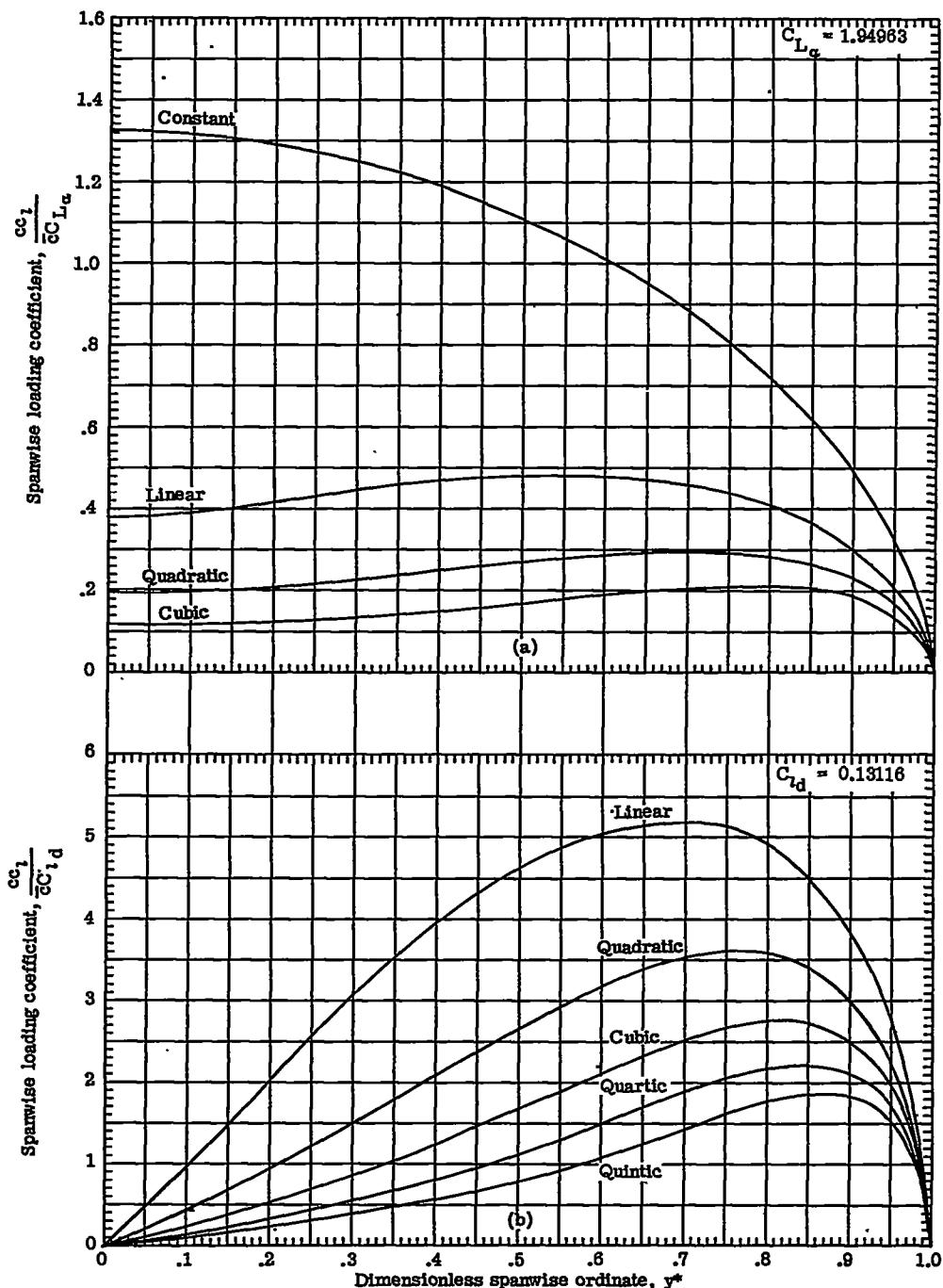
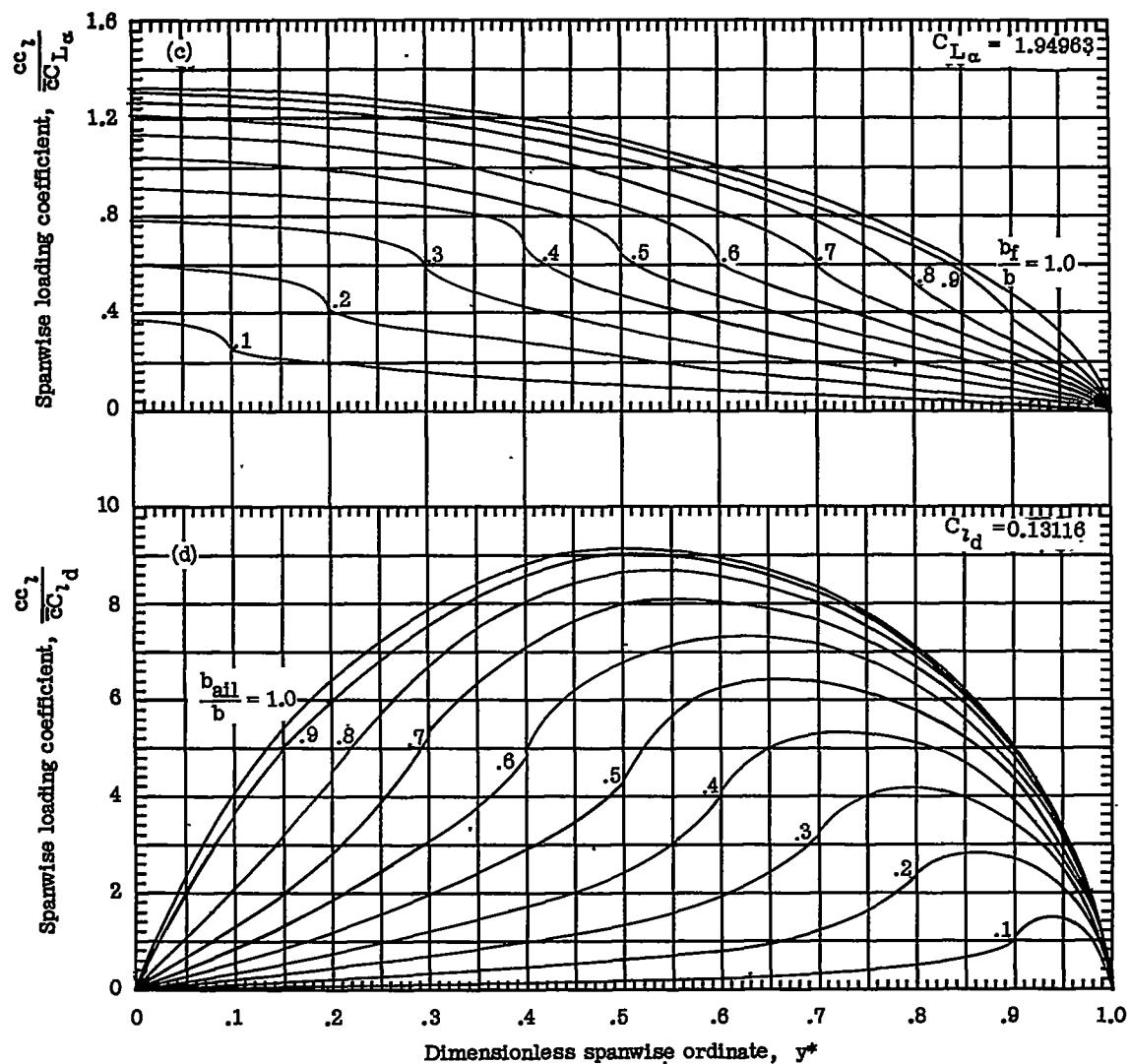


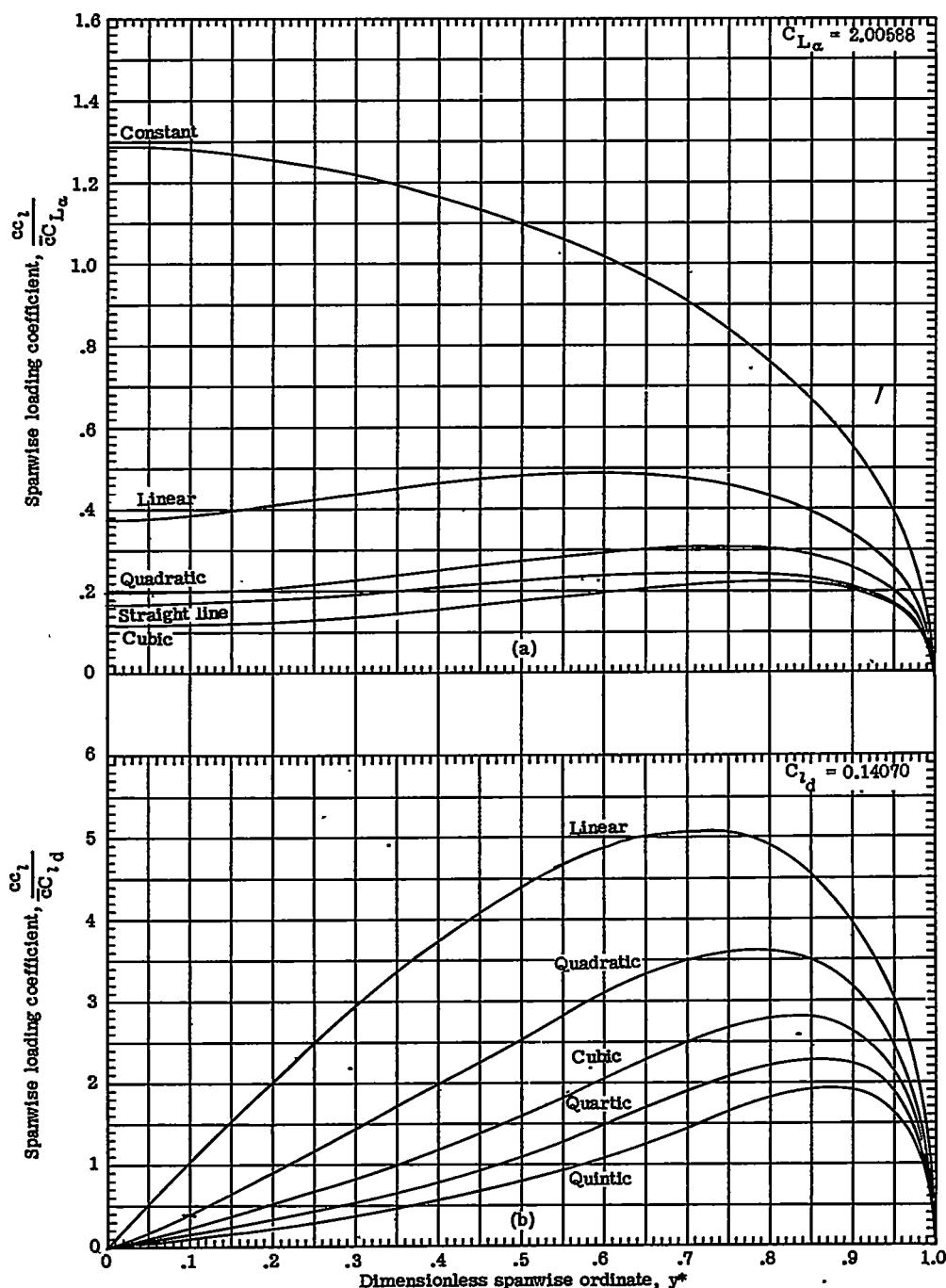
Figure 21.- Spanwise lift distributions for plan form 411 ( $A = 1.5$ ;  $\lambda = 0$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 21.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 22.- Spanwise lift distributions for plan form 412 ( $A = 1.5$ ;  
 $\lambda = 0.25$ ;  $\Lambda = 30^\circ$ ).

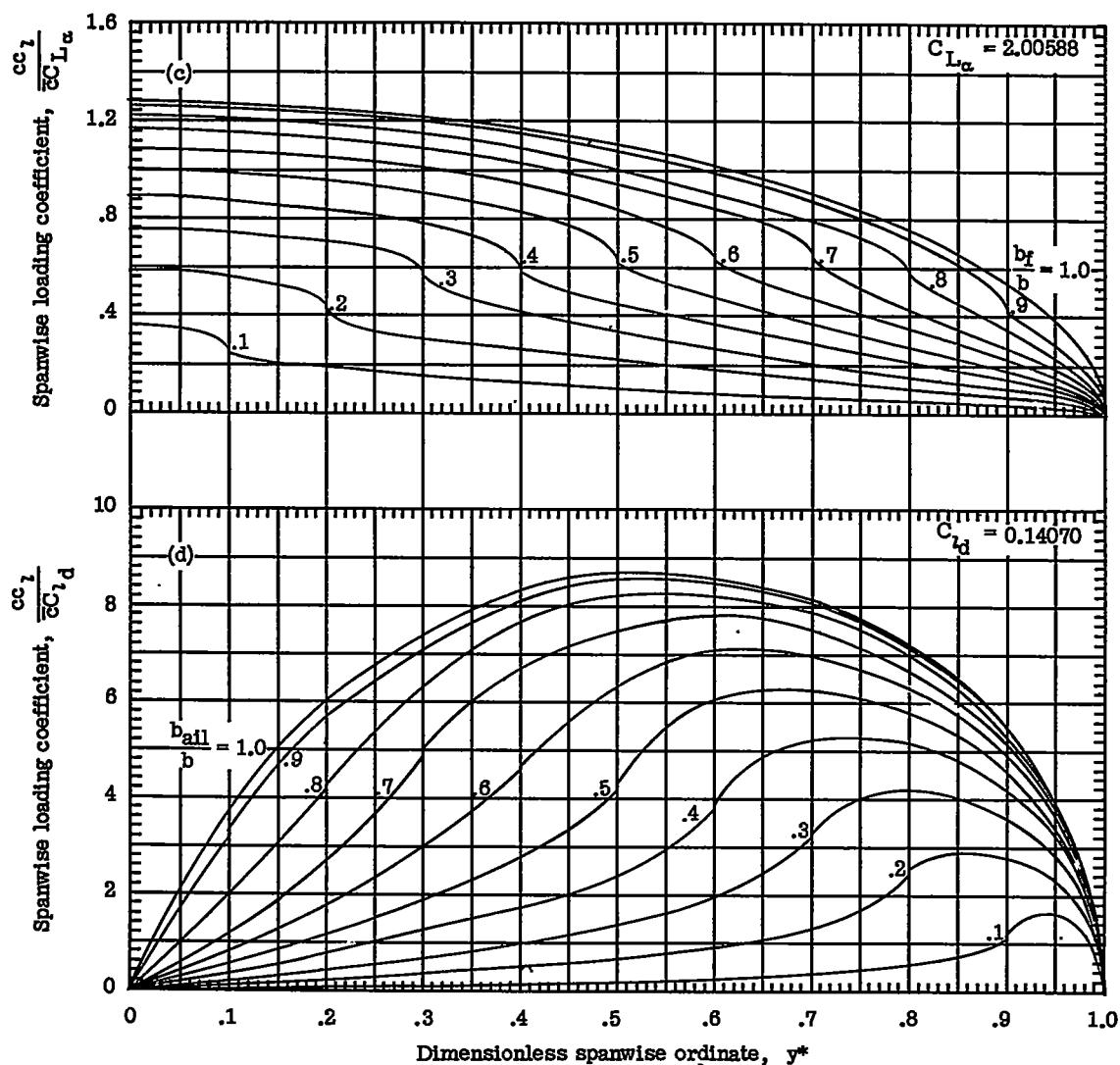
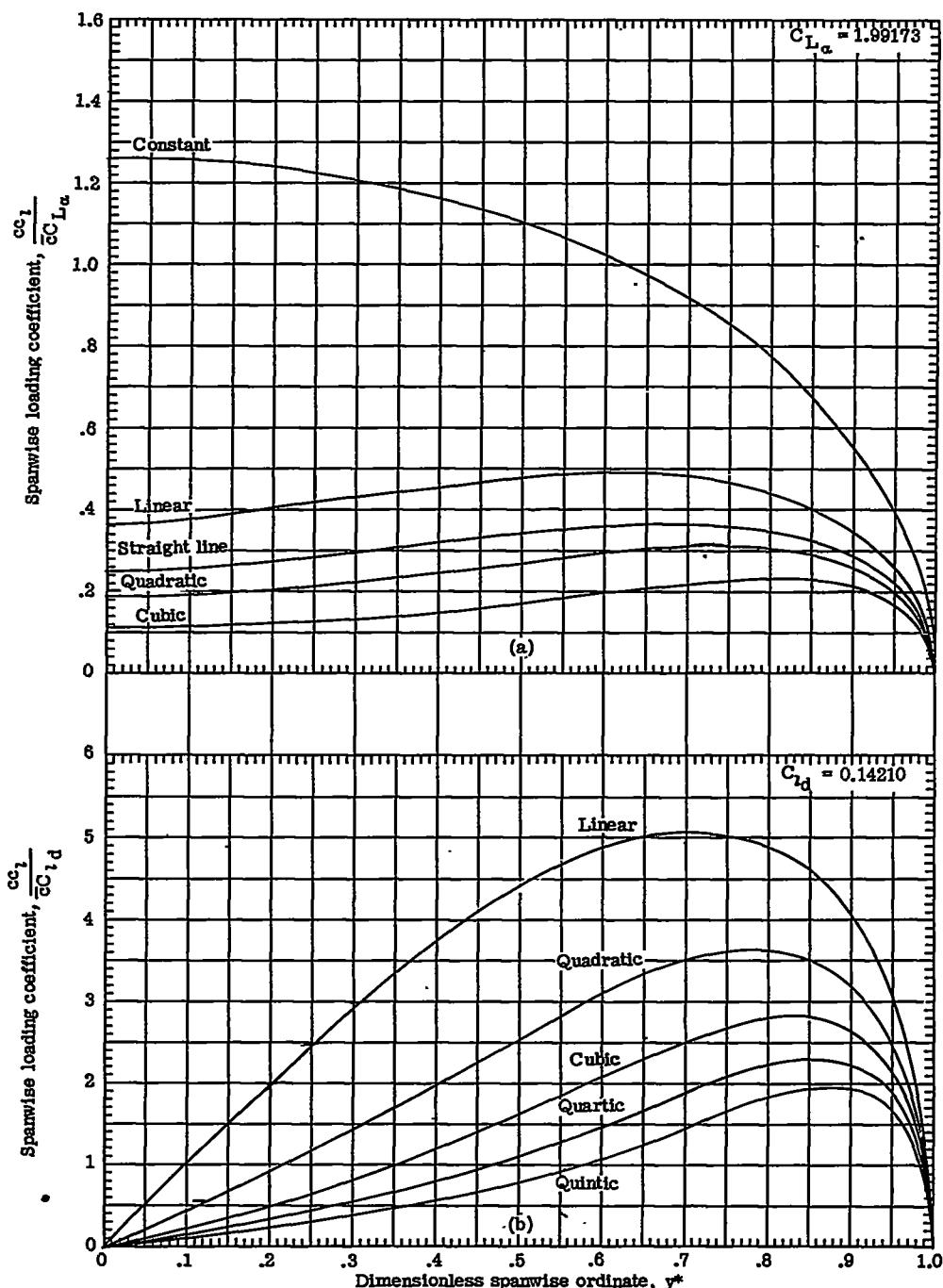


Figure 22.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 23.- Spanwise lift distributions for plan form 413 ( $A = 1.5$ ;  
 $\lambda = 0.50$ ;  $\Lambda = 30^\circ$ ).

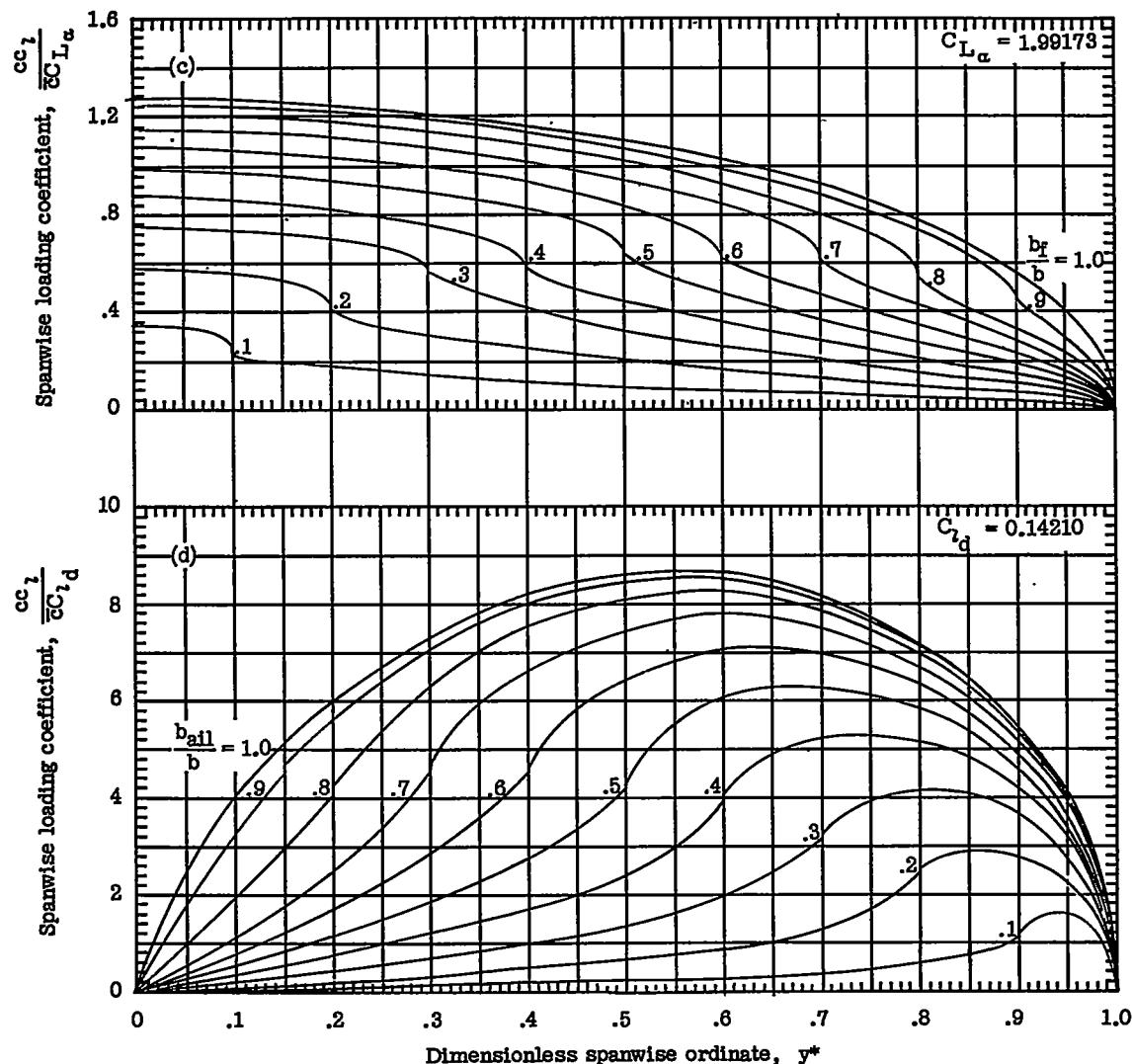
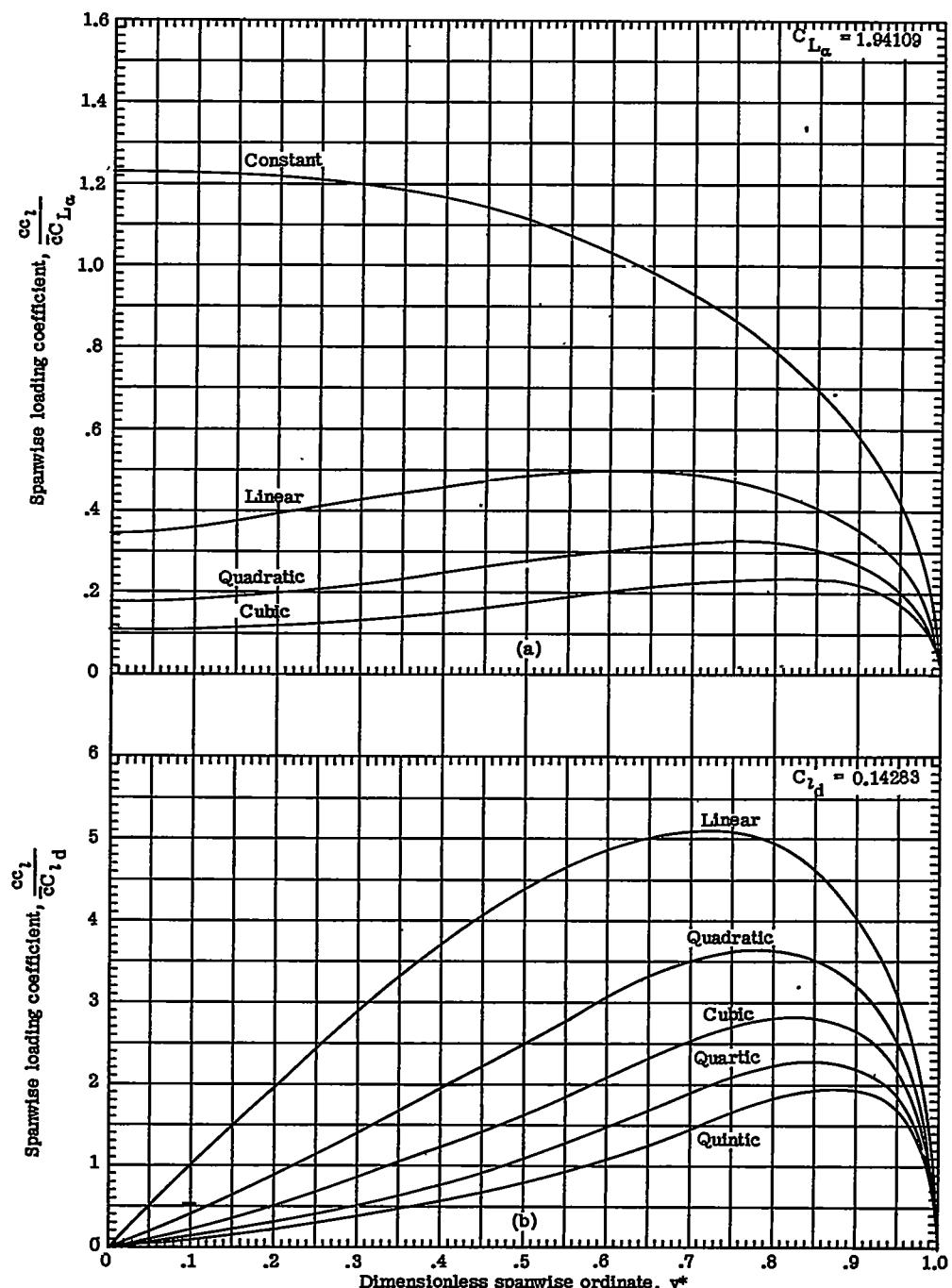


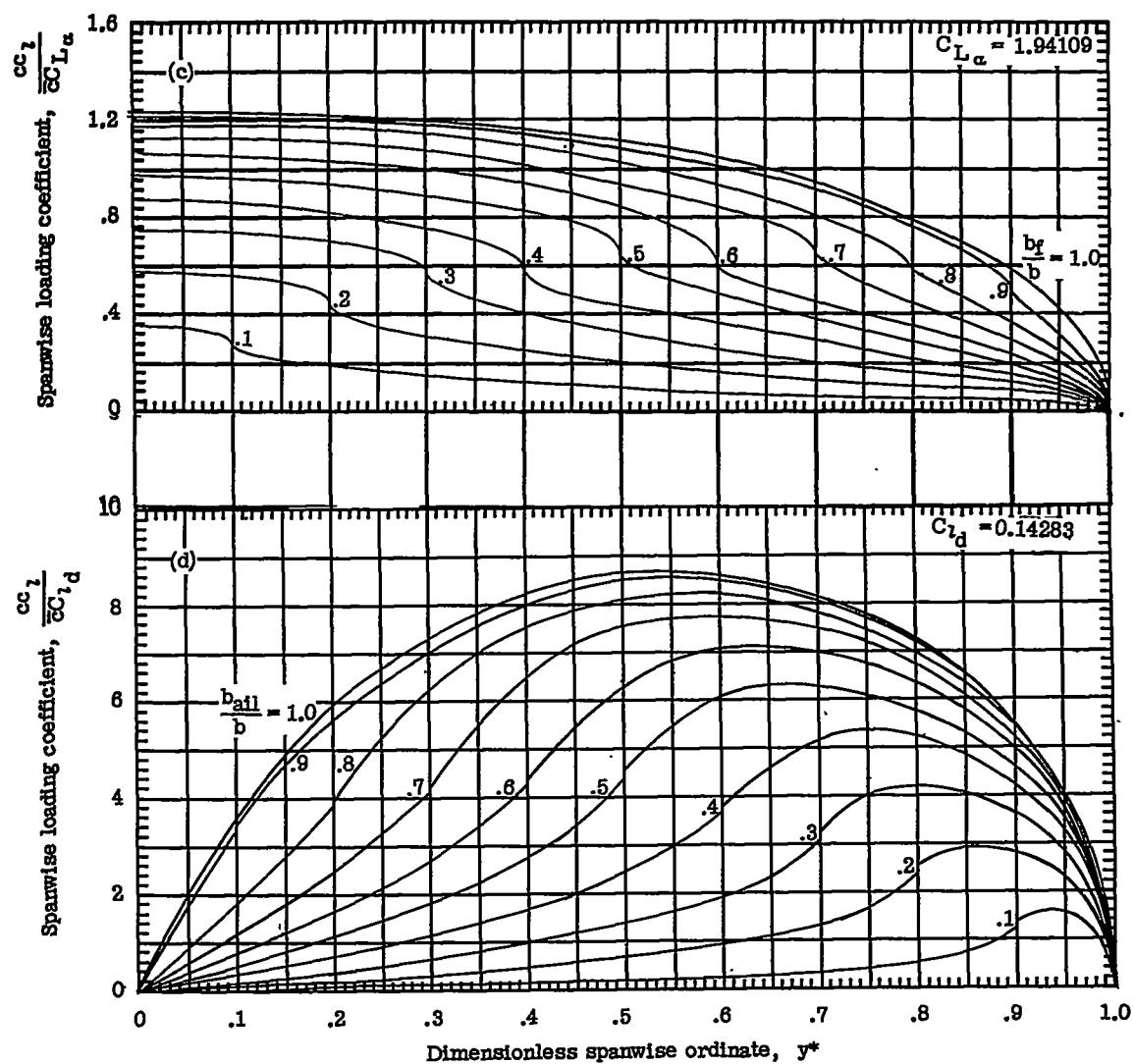
Figure 23.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

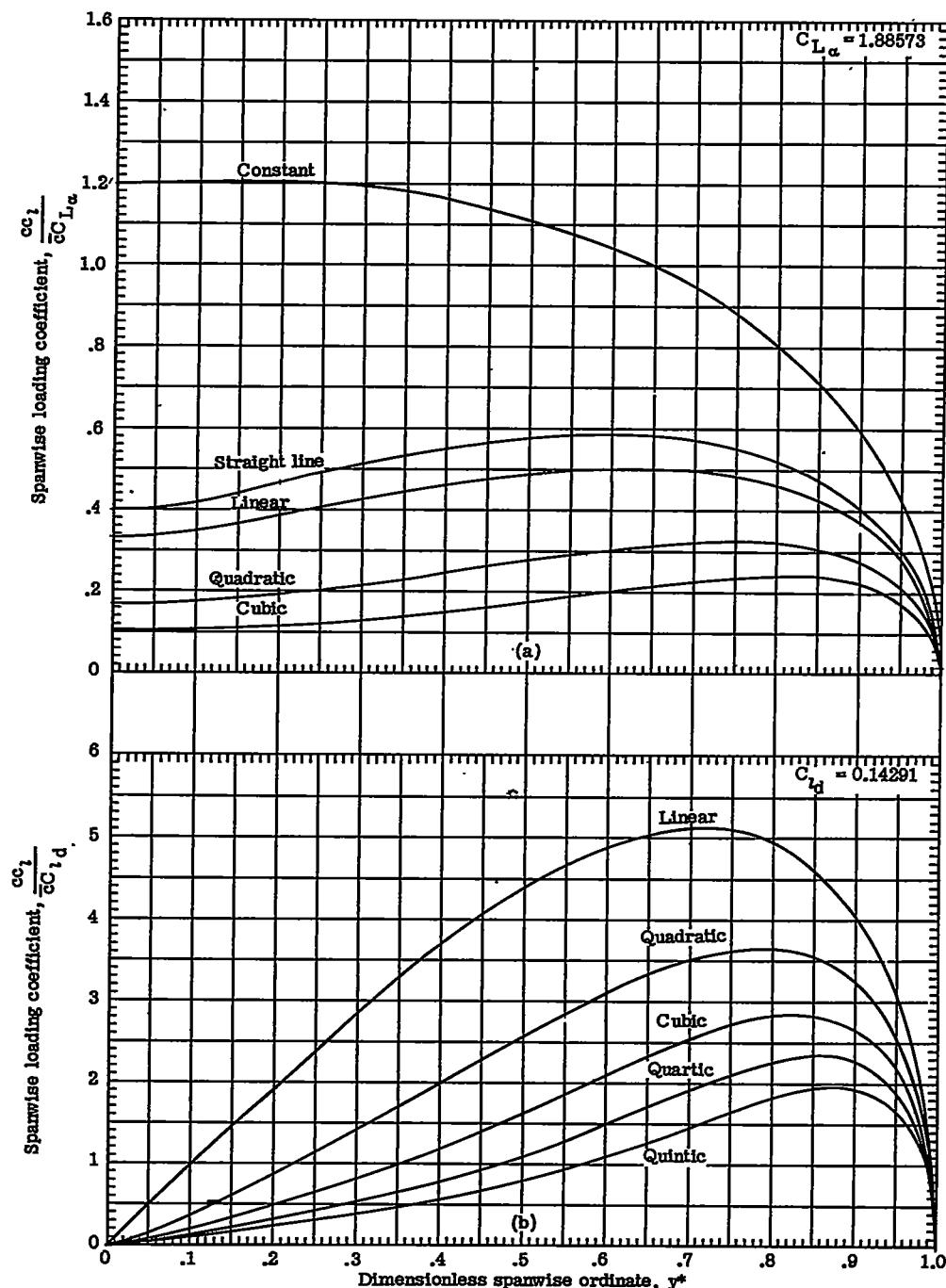
Figure 24.- Spanwise lift distributions for plan form 414 ( $A = 1.5$ ;  $\lambda = 1.00$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

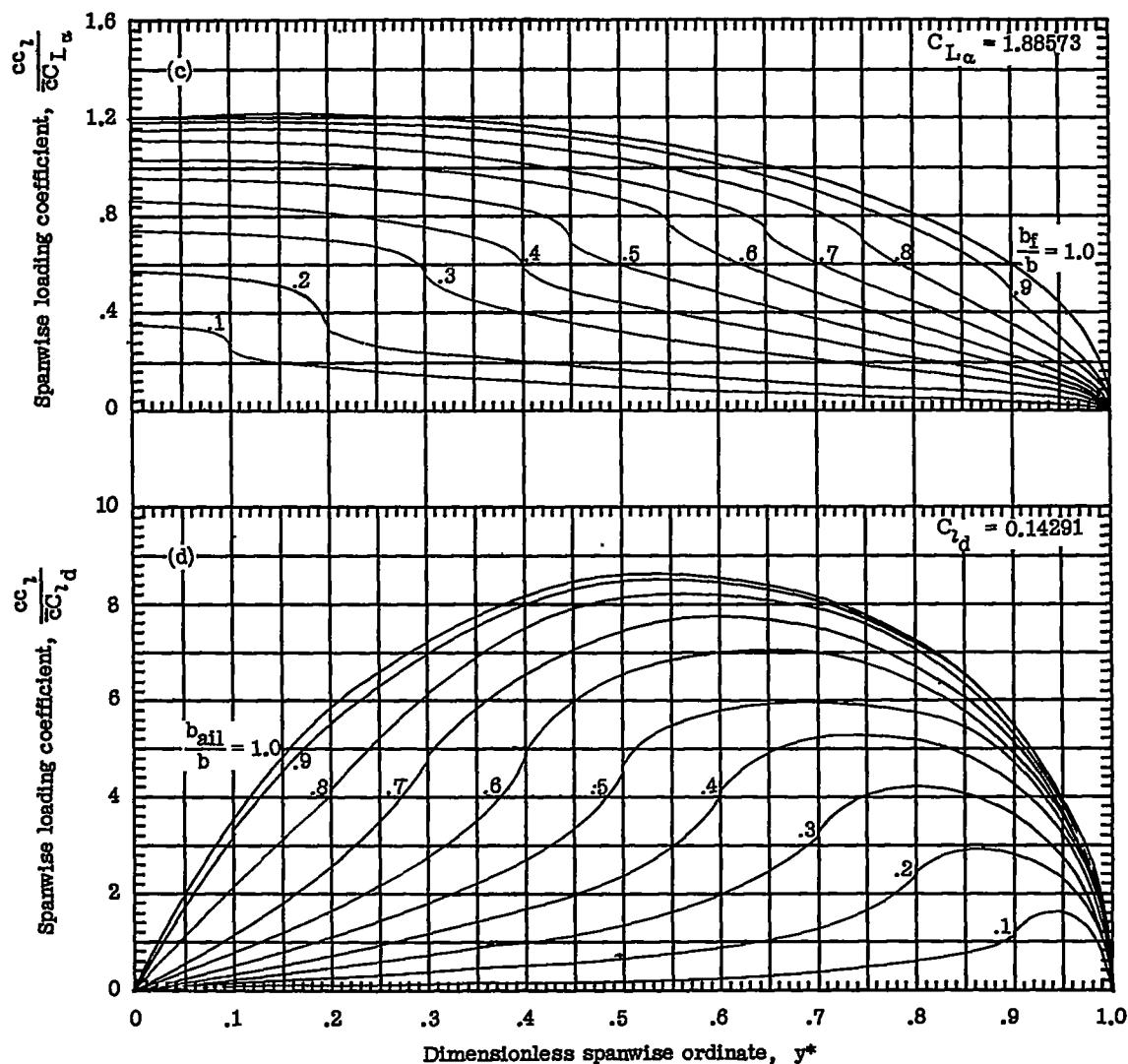
Figure 24.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 25.- Spanwise lift distributions for plan form 415 ( $A = 1.5$ ;  $\lambda = 1.50$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 25.- Concluded.

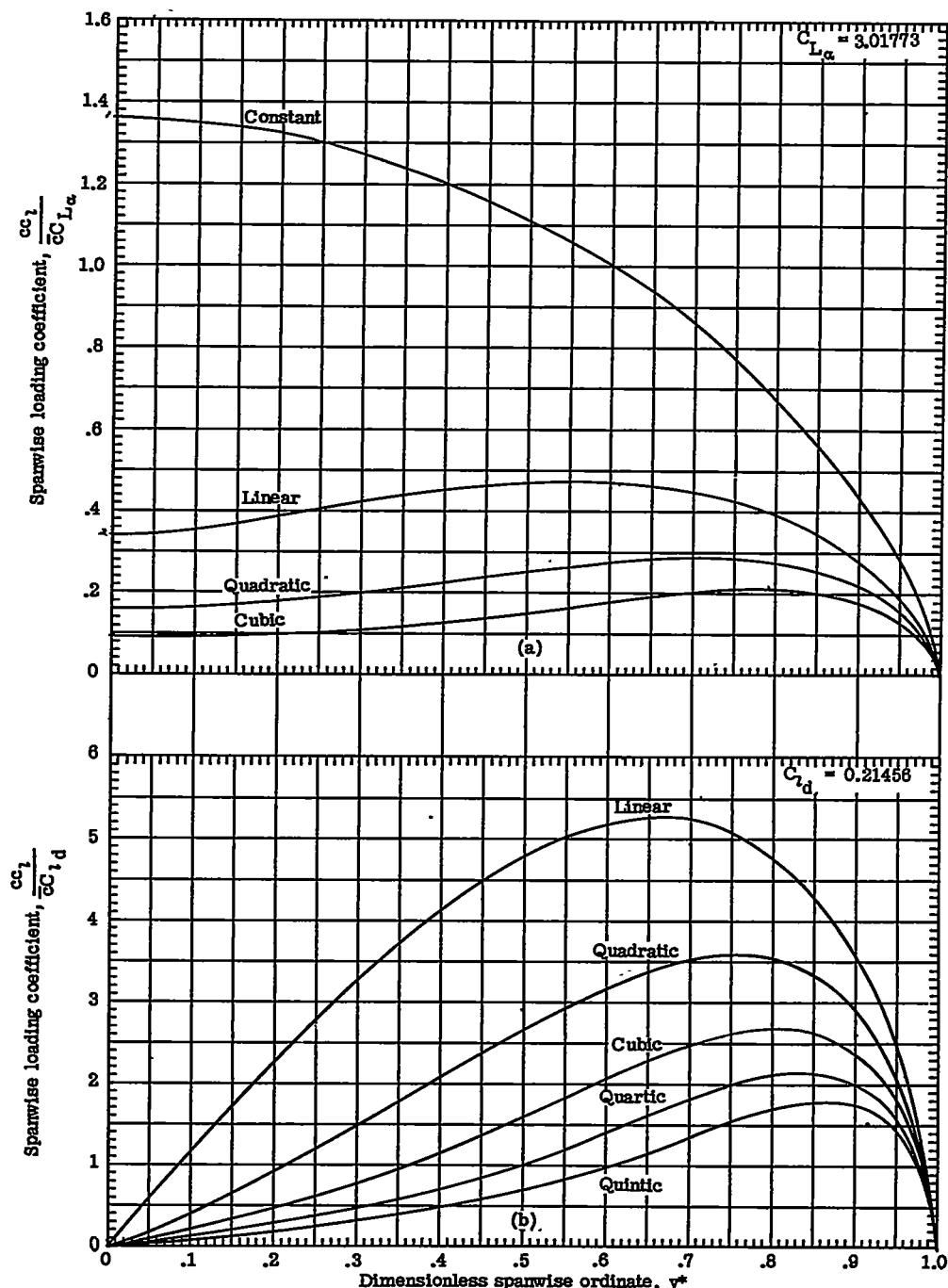
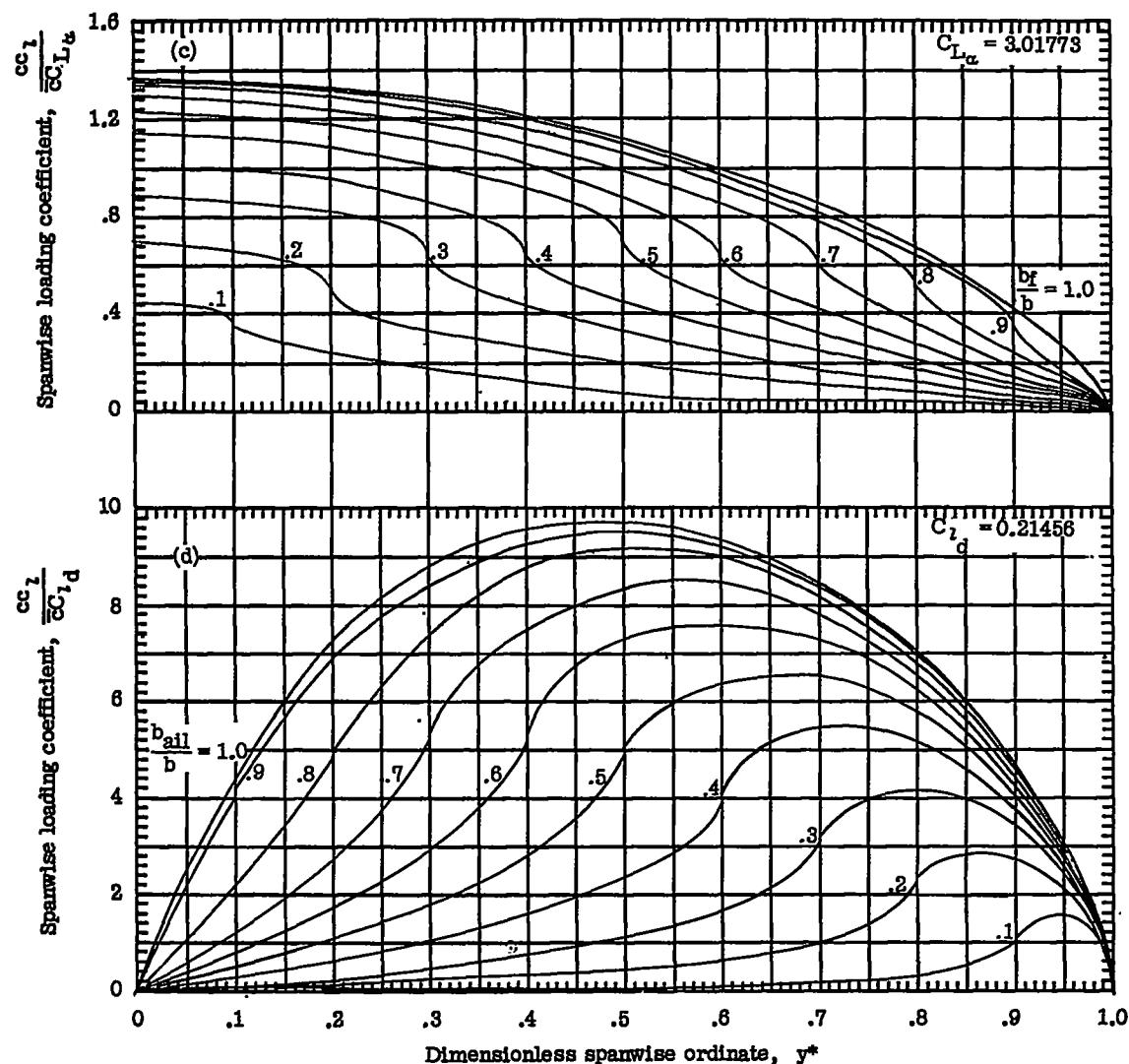


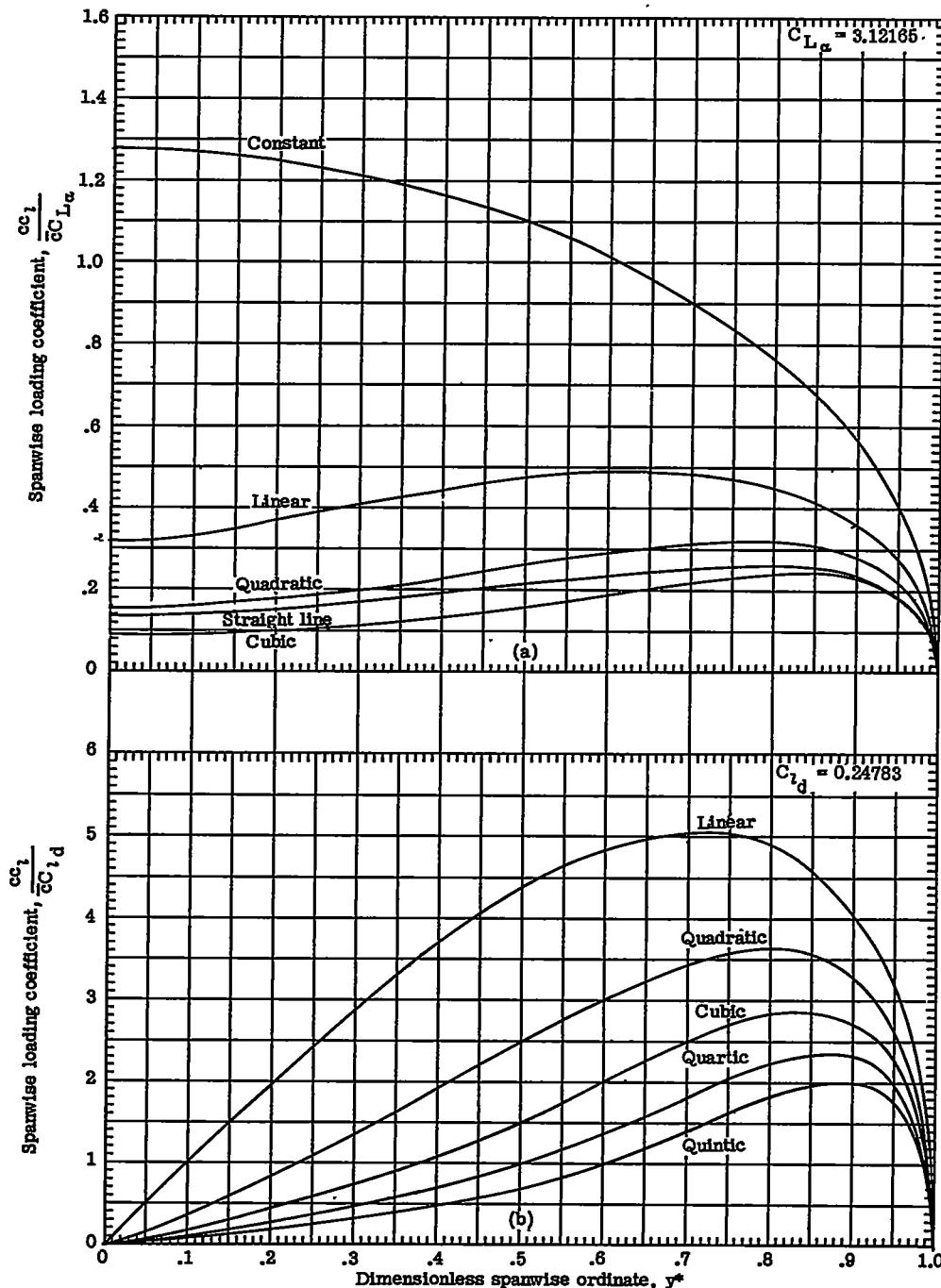
Figure 26.- Spanwise lift distributions for plan form 421 ( $A = 3.0$ ;  $\lambda = 0$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

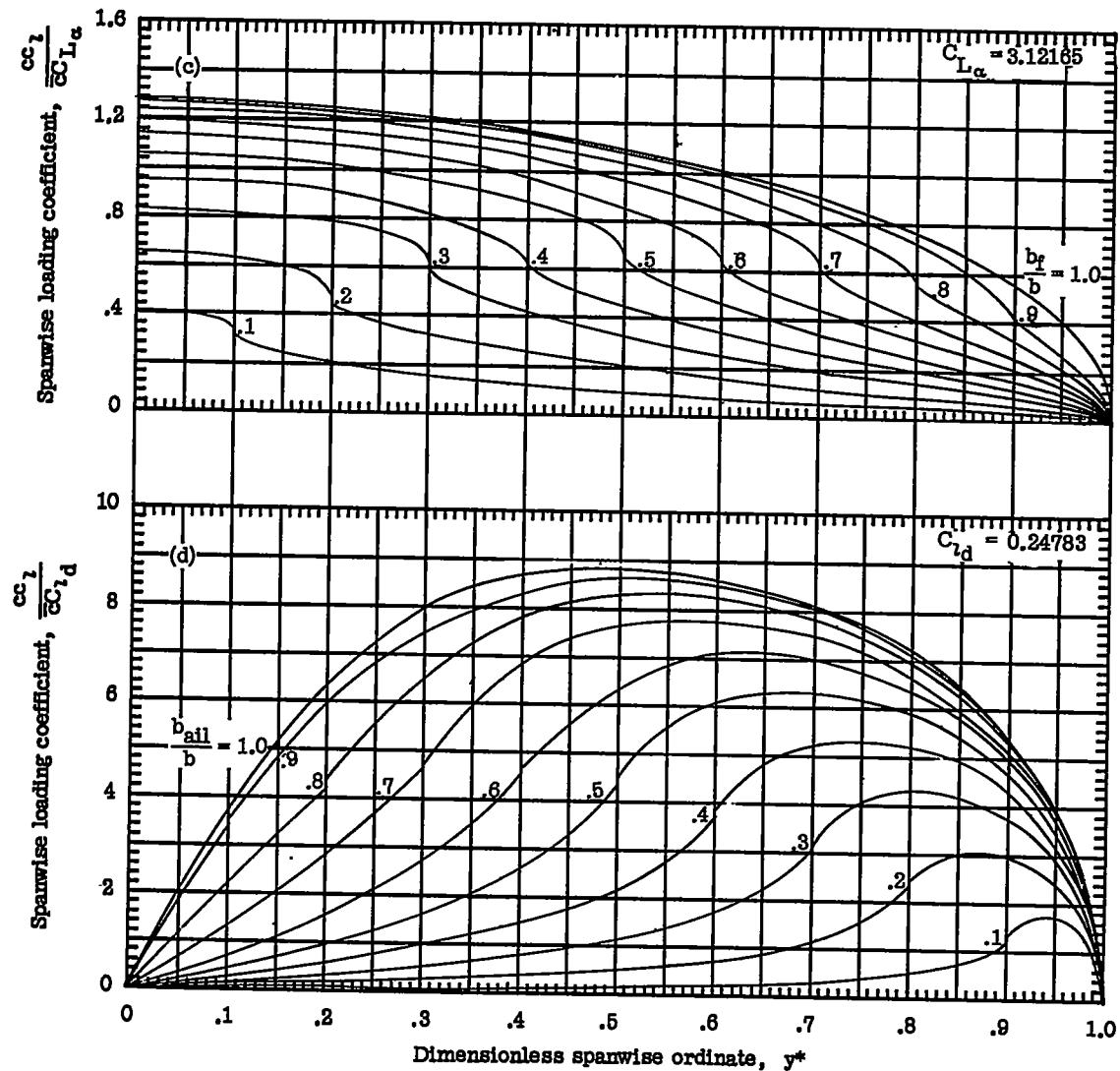
Figure 26.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

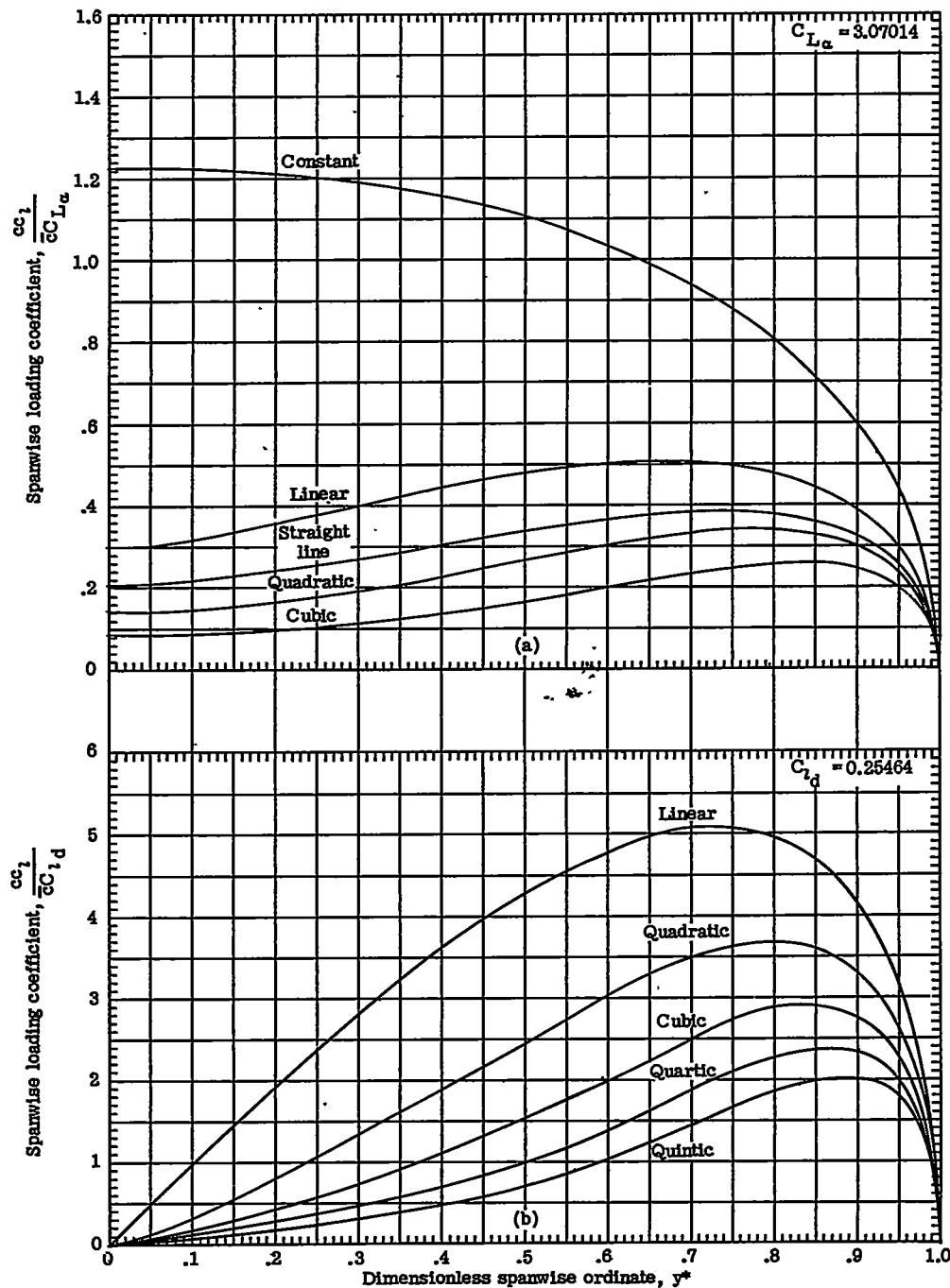
Figure 27.- Spanwise lift distributions for plan form 422 ( $A = 3.0$ ;  $\lambda = 0.25$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

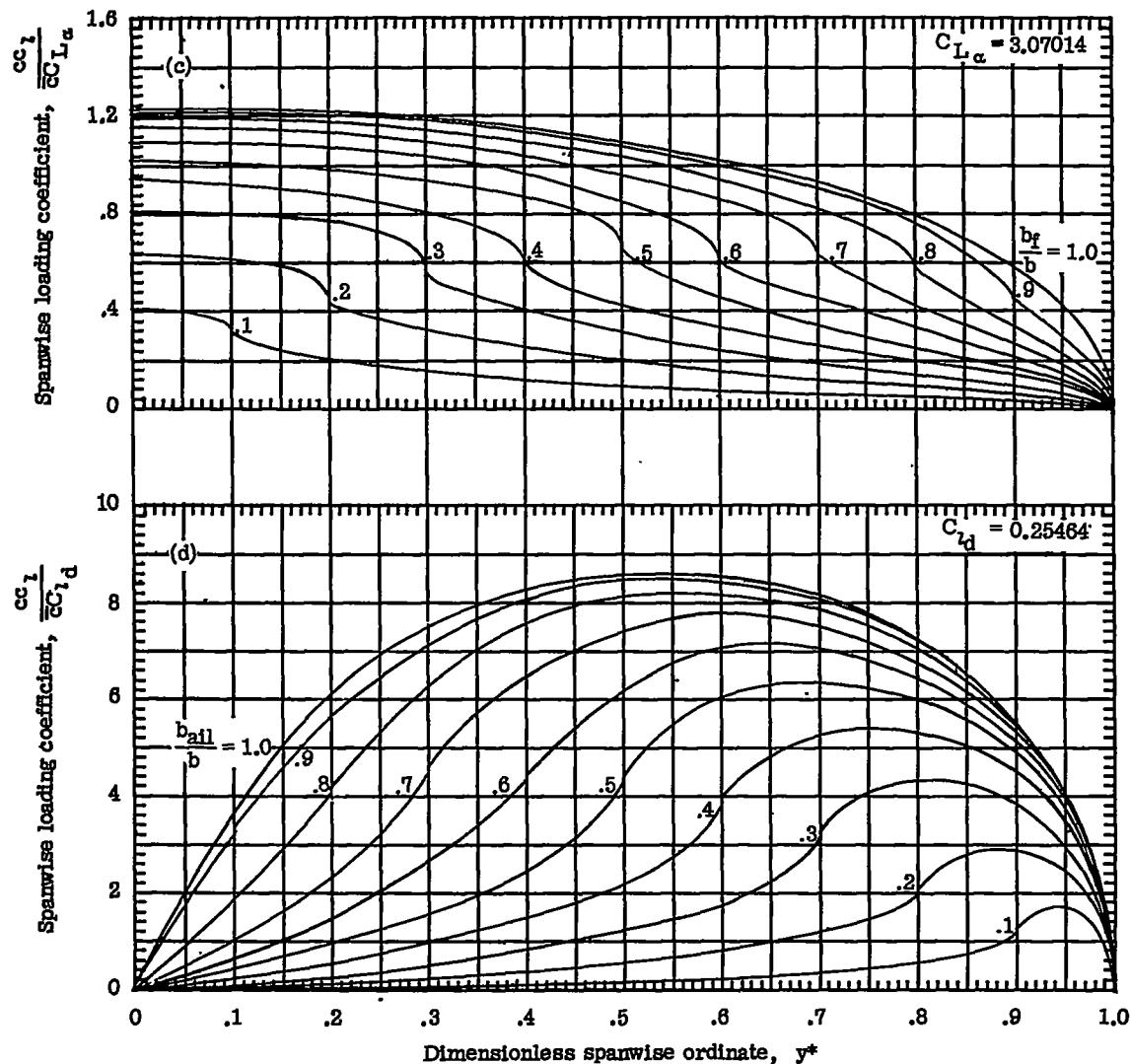
Figure 27.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 28.- Spanwise lift distributions for plan form 423 ( $A = 3.0$ ;  $\lambda = 0.50$ ,  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 28.- Concluded.

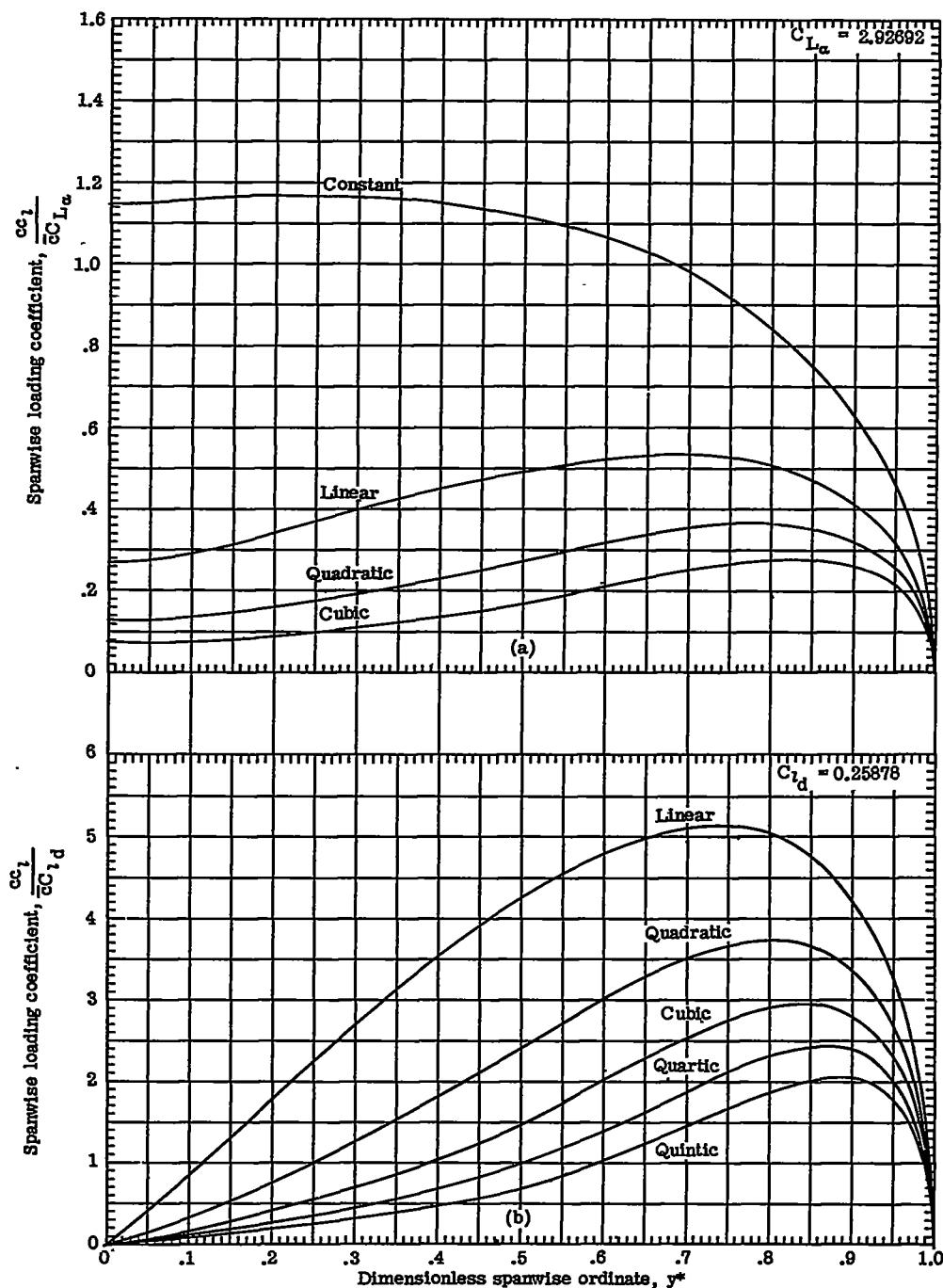


Figure 29.- Spanwise lift distributions for plan form 424 ( $A = 3.0$ ;  $\lambda = 1.00$ ;  $\Lambda = 30^\circ$ ).

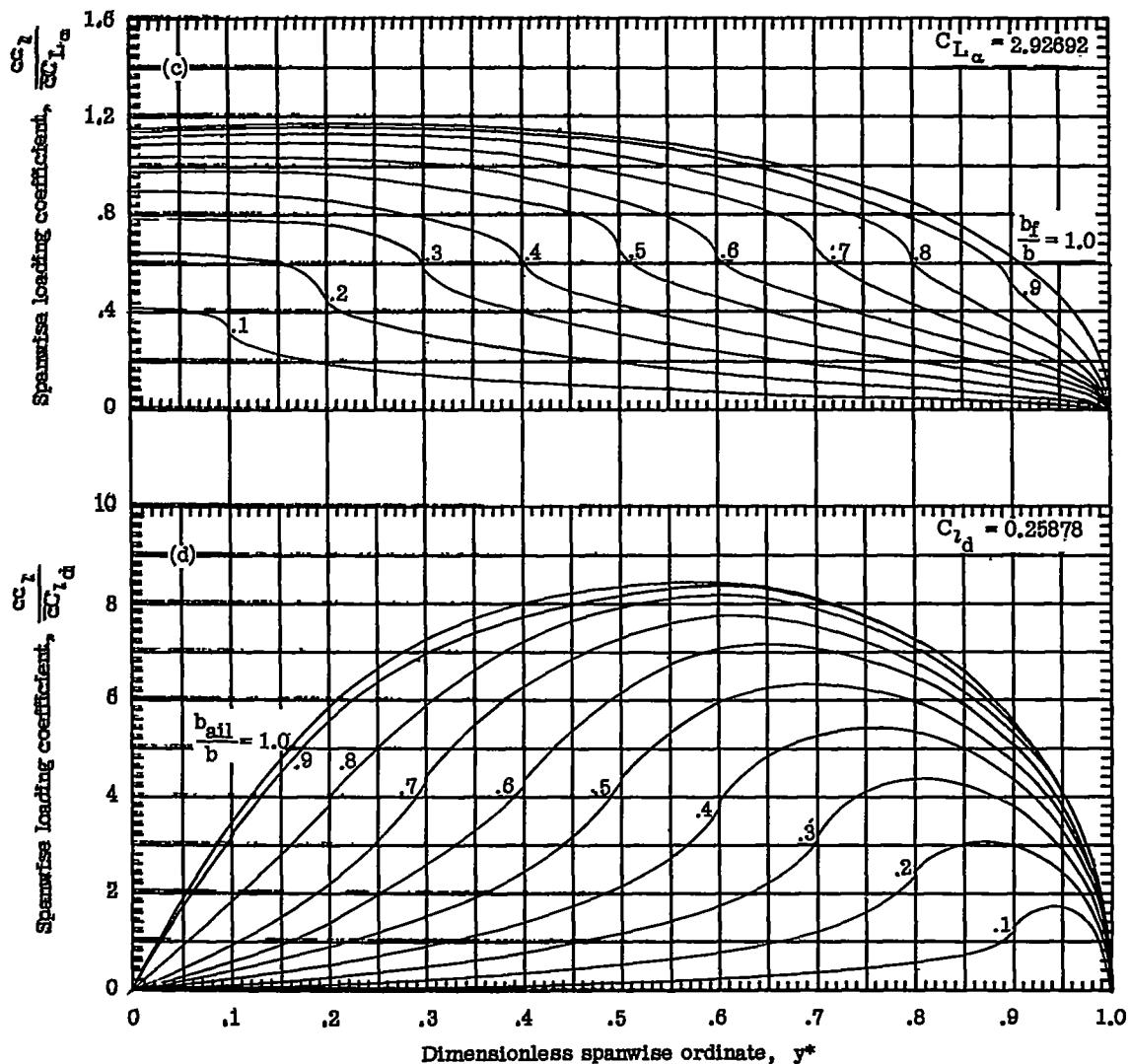


Figure 29.- Concluded.

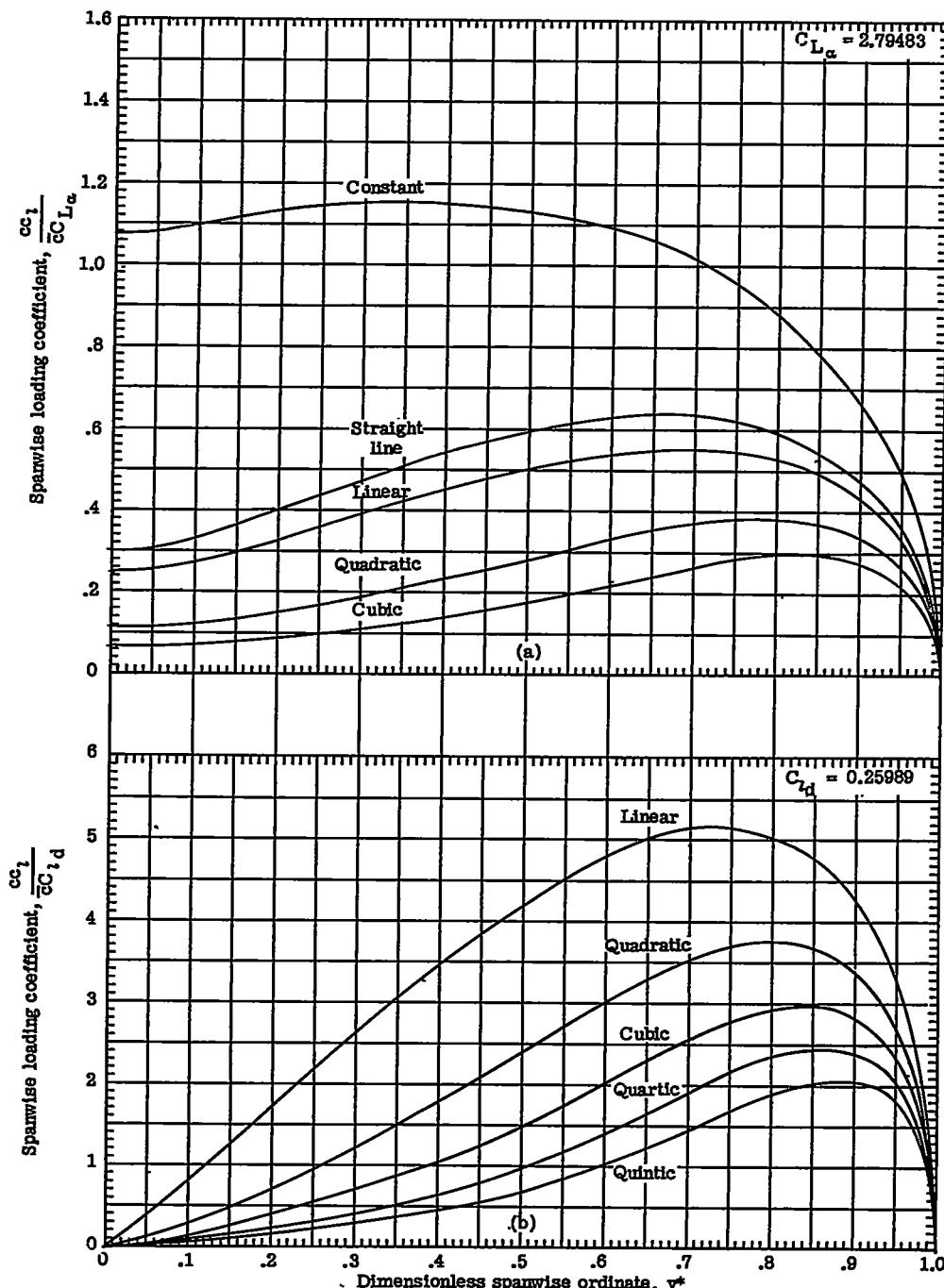
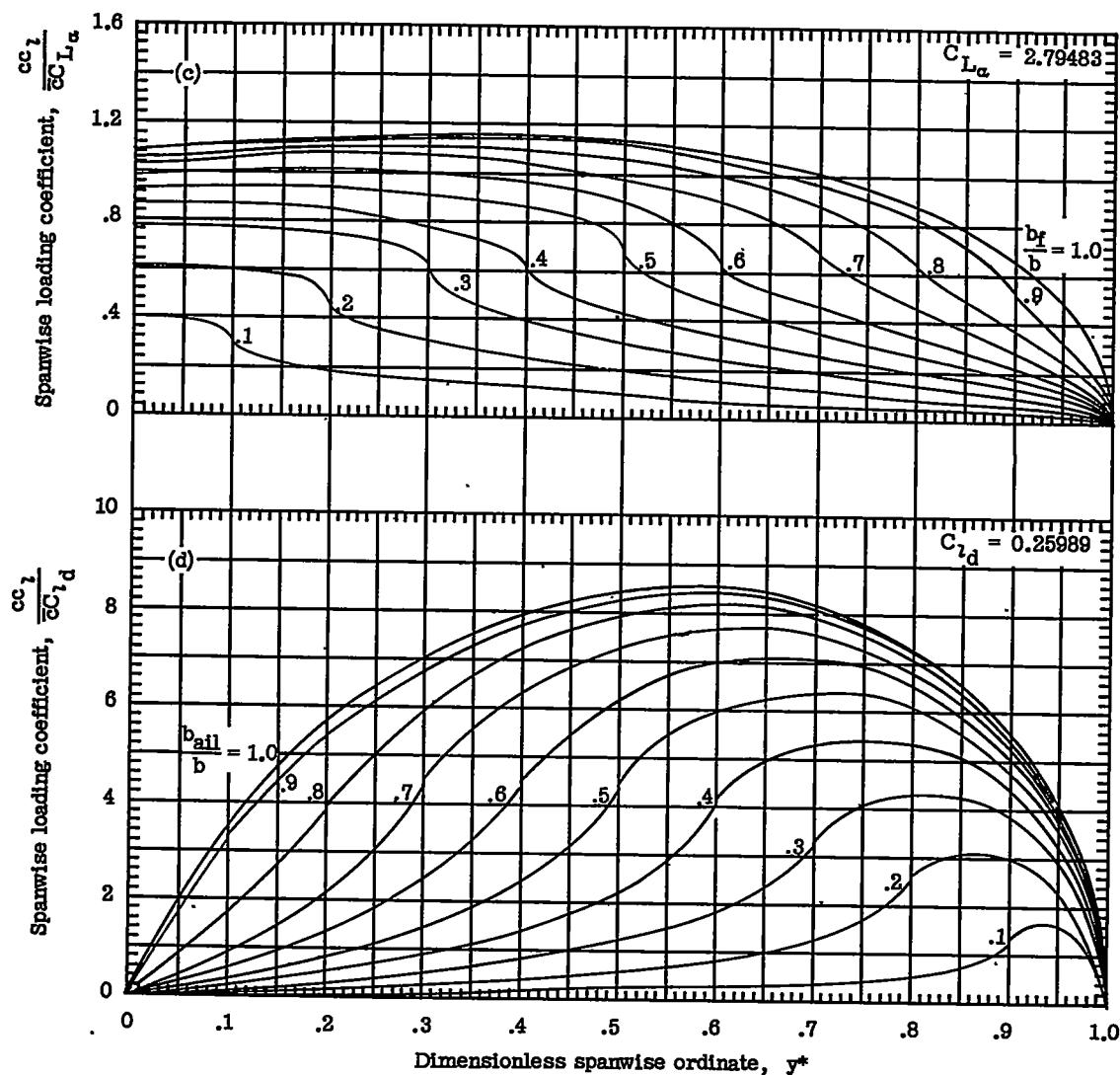


Figure 30.- Spanwise lift distributions for plan form 425 ( $A = 3.0$ ;  
 $\lambda = 1.50$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 30.- Concluded.

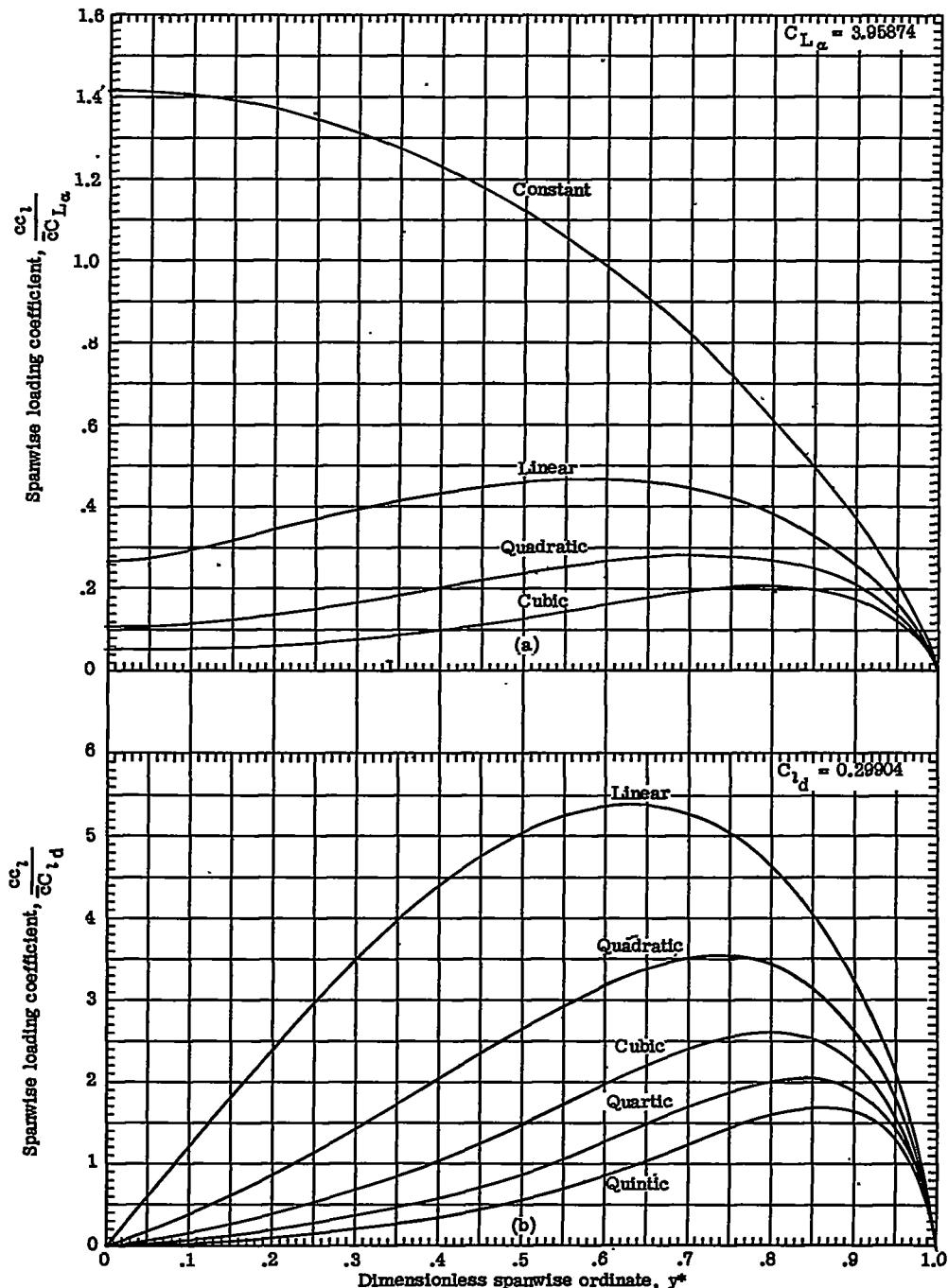


Figure 31.-- Spanwise lift distributions for plan form 431 ( $A = 6.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 30^\circ$ ).

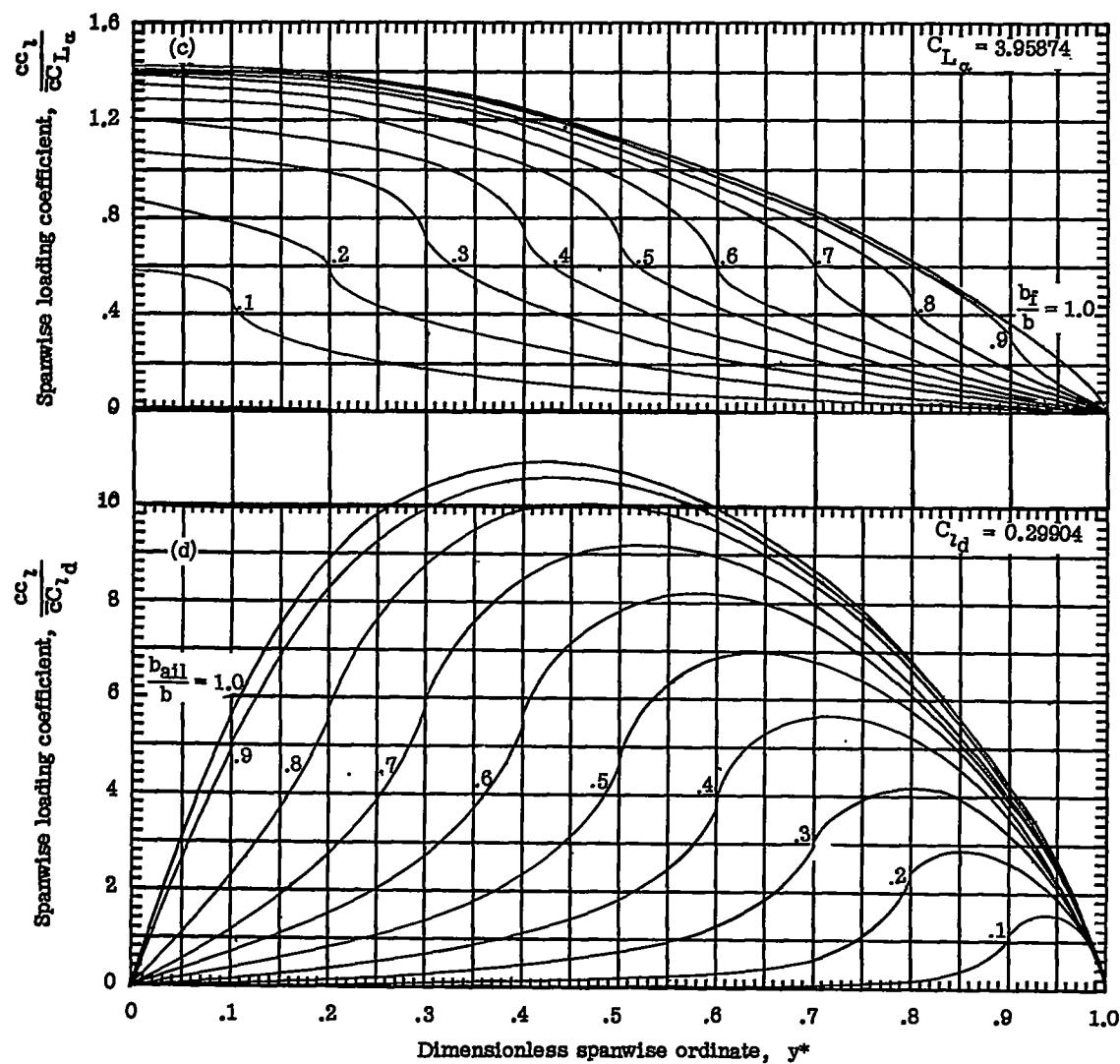
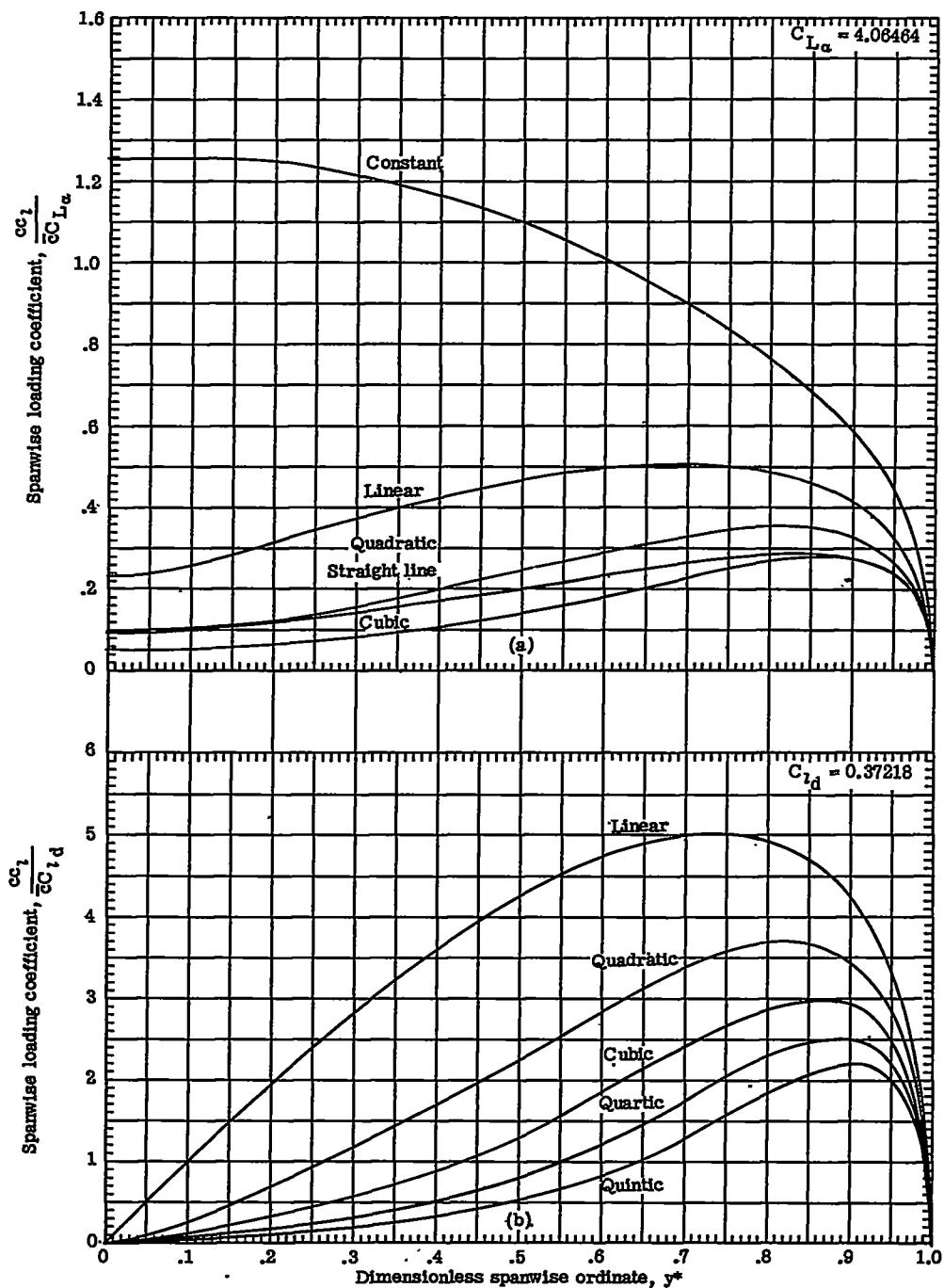


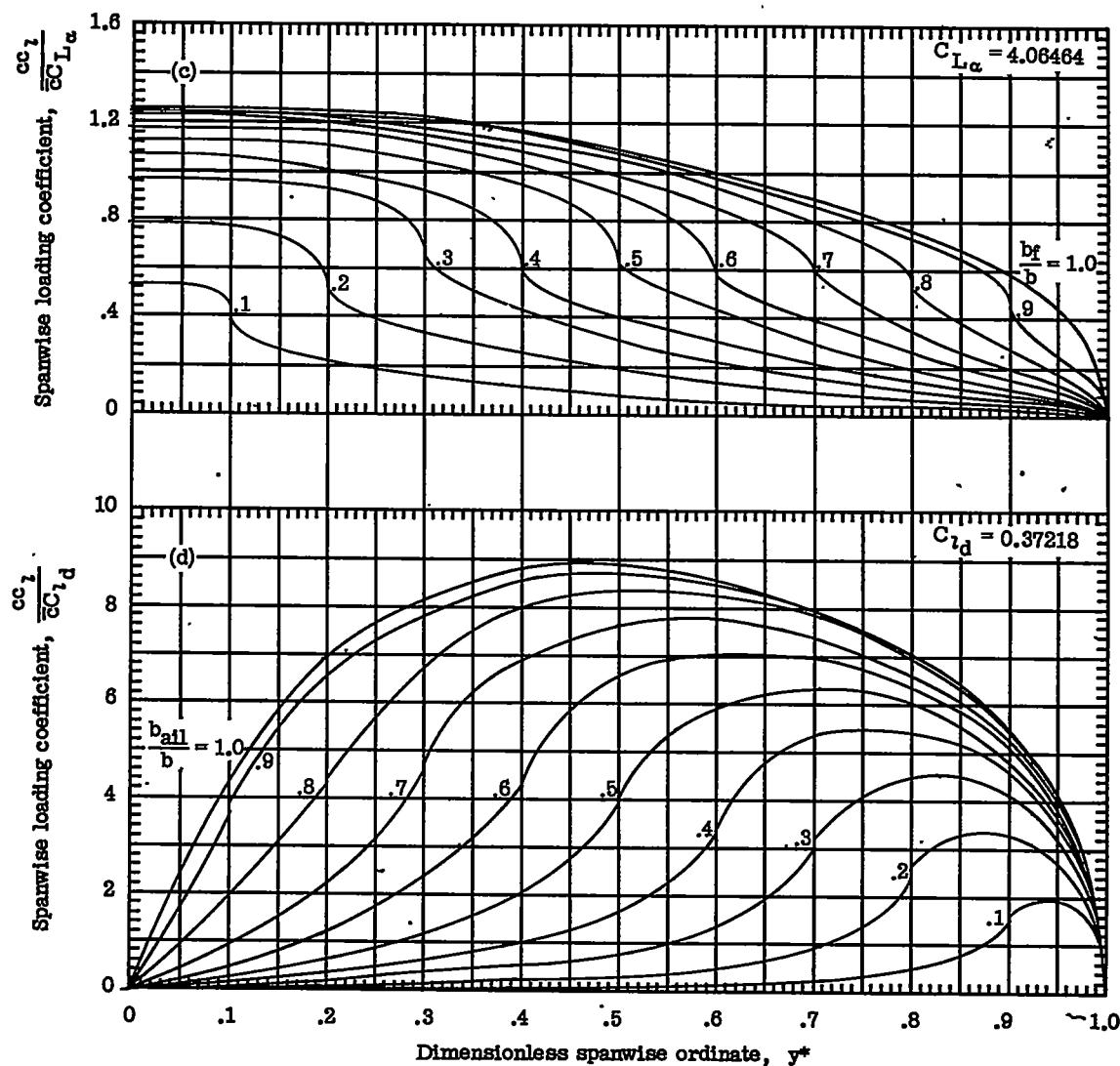
Figure 31.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

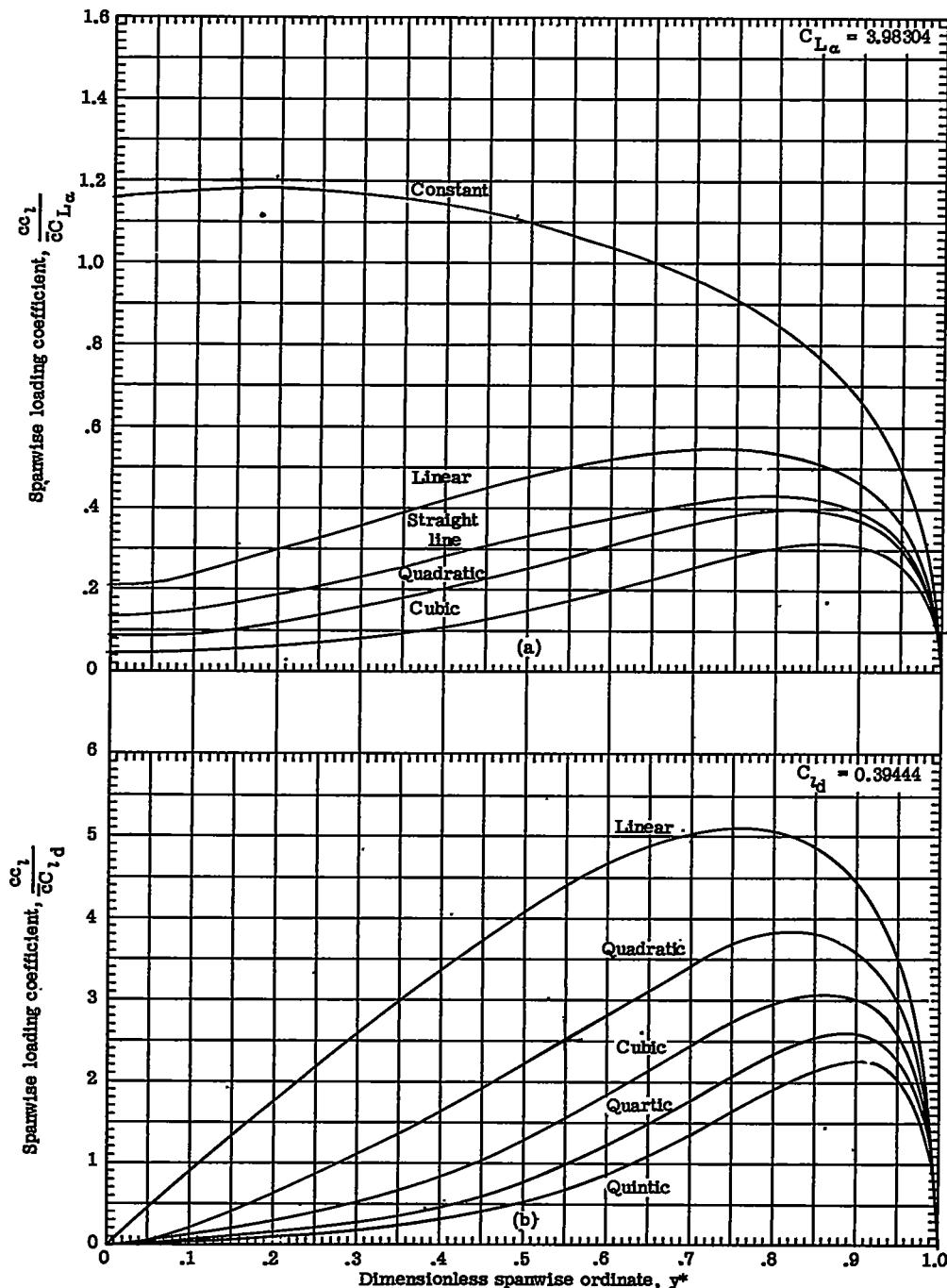
Figure 32.- Spanwise lift distributions for plan form 432 ( $A = 6.0$ ;  
 $\lambda = 0.25$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

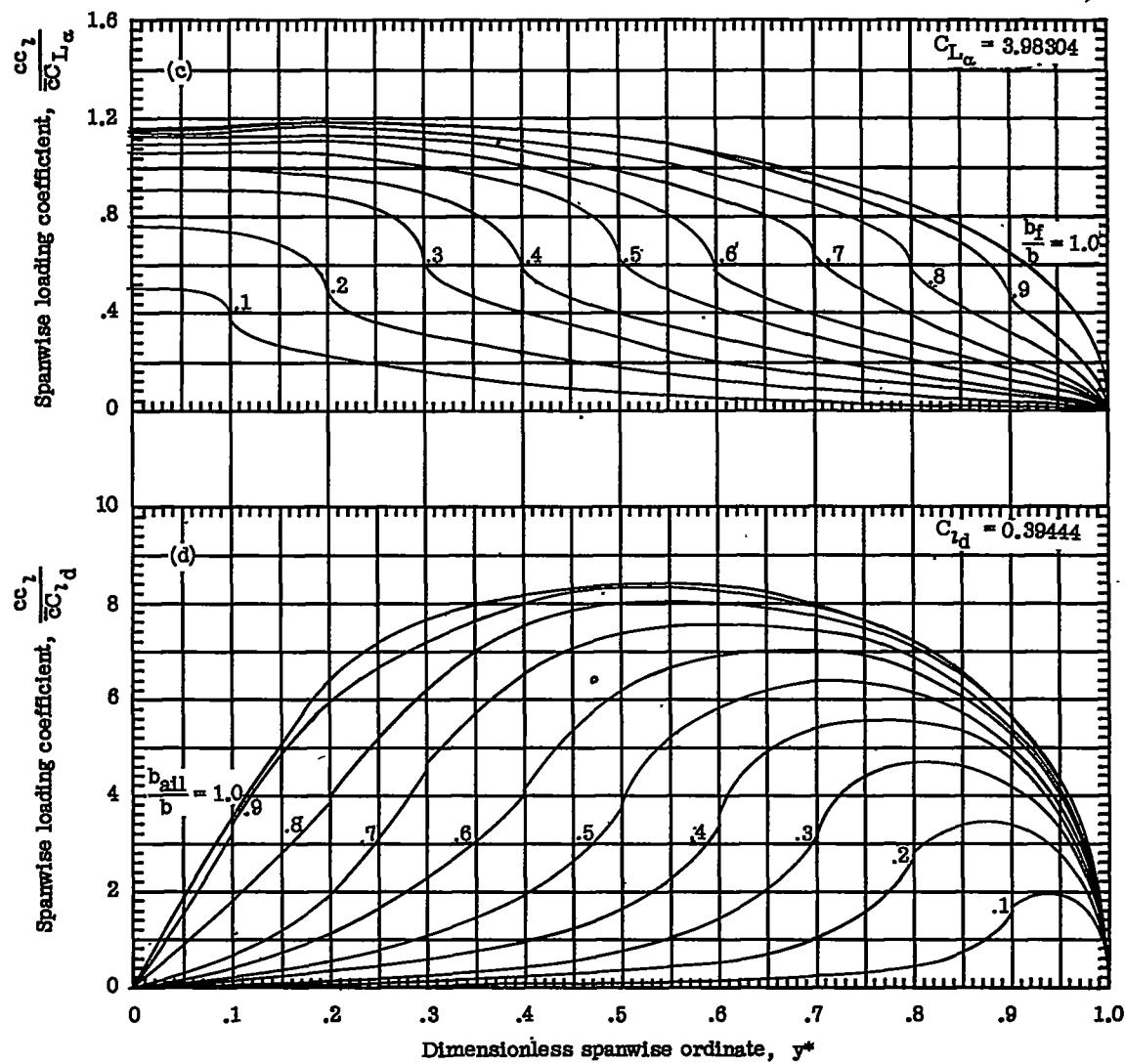
Figure 32.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 33.- Spanwise lift distributions for plan form 433 ( $A = 6.0$ ;  
 $\lambda = 0.50$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 33.- Concluded.

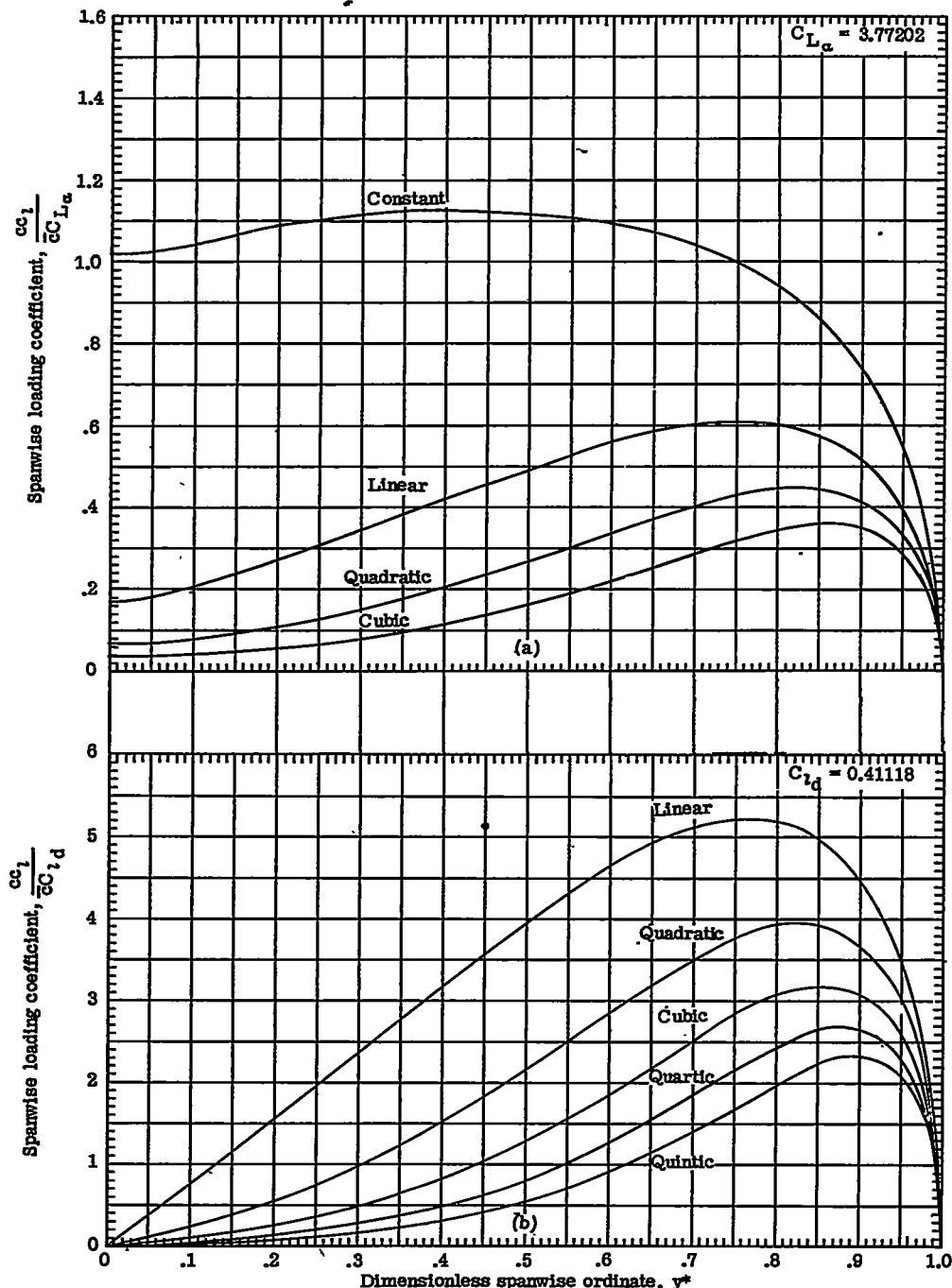
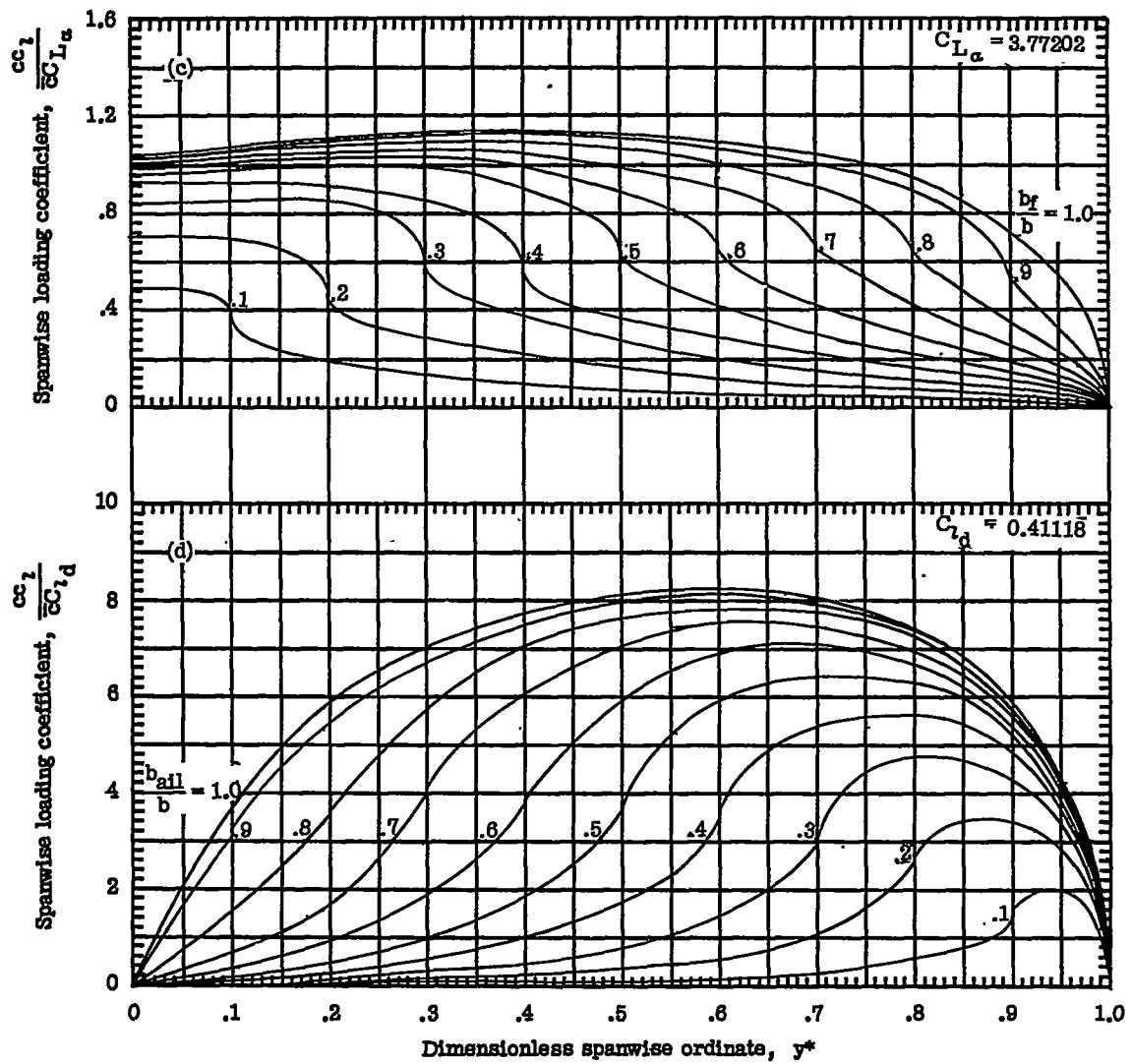


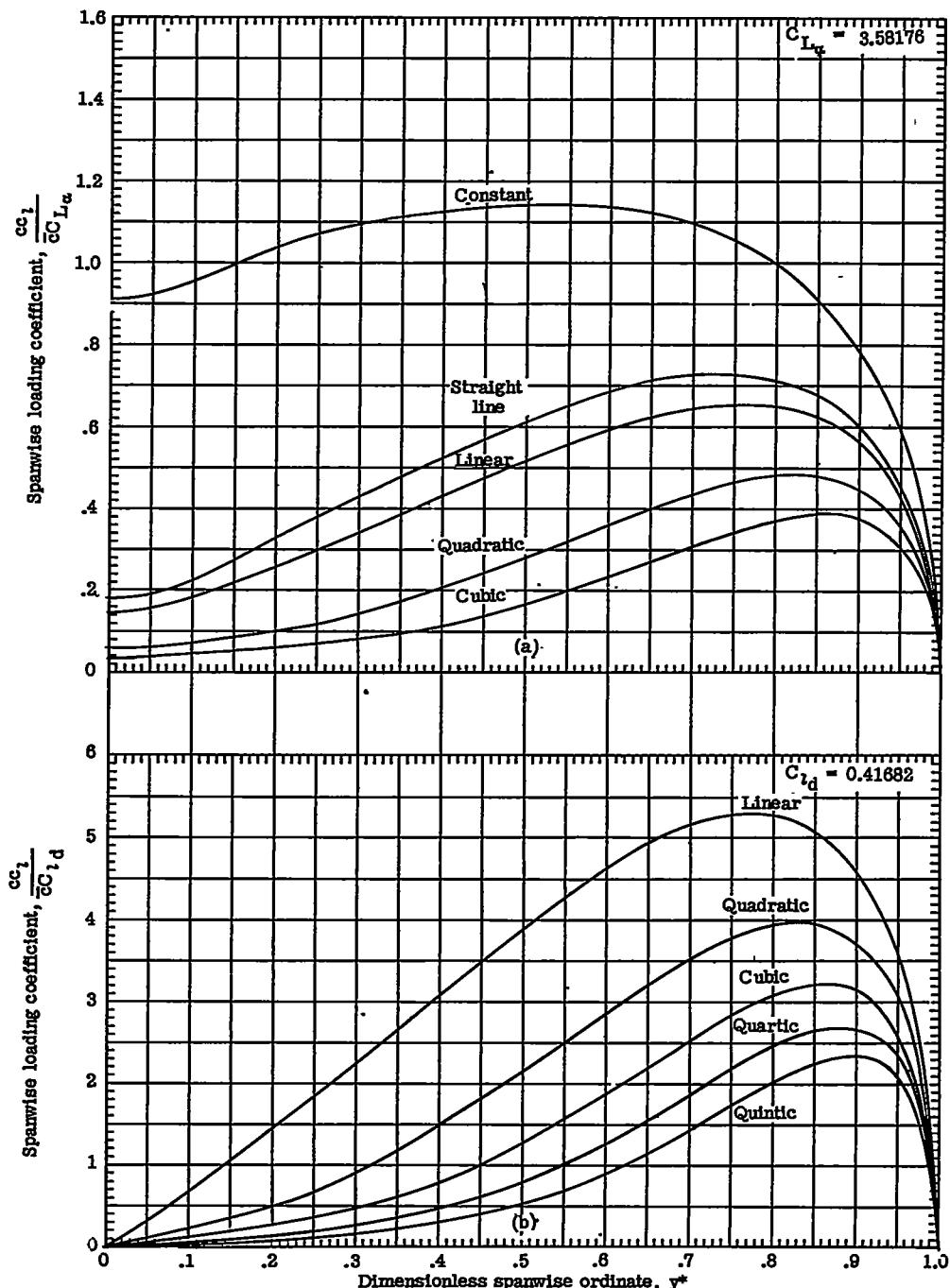
Figure 34.-- Spanwise lift distributions for plan form 434 ( $A = 6.0$ ;  $\lambda = 1.00$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(b) Lift distribution for outboard aileron.

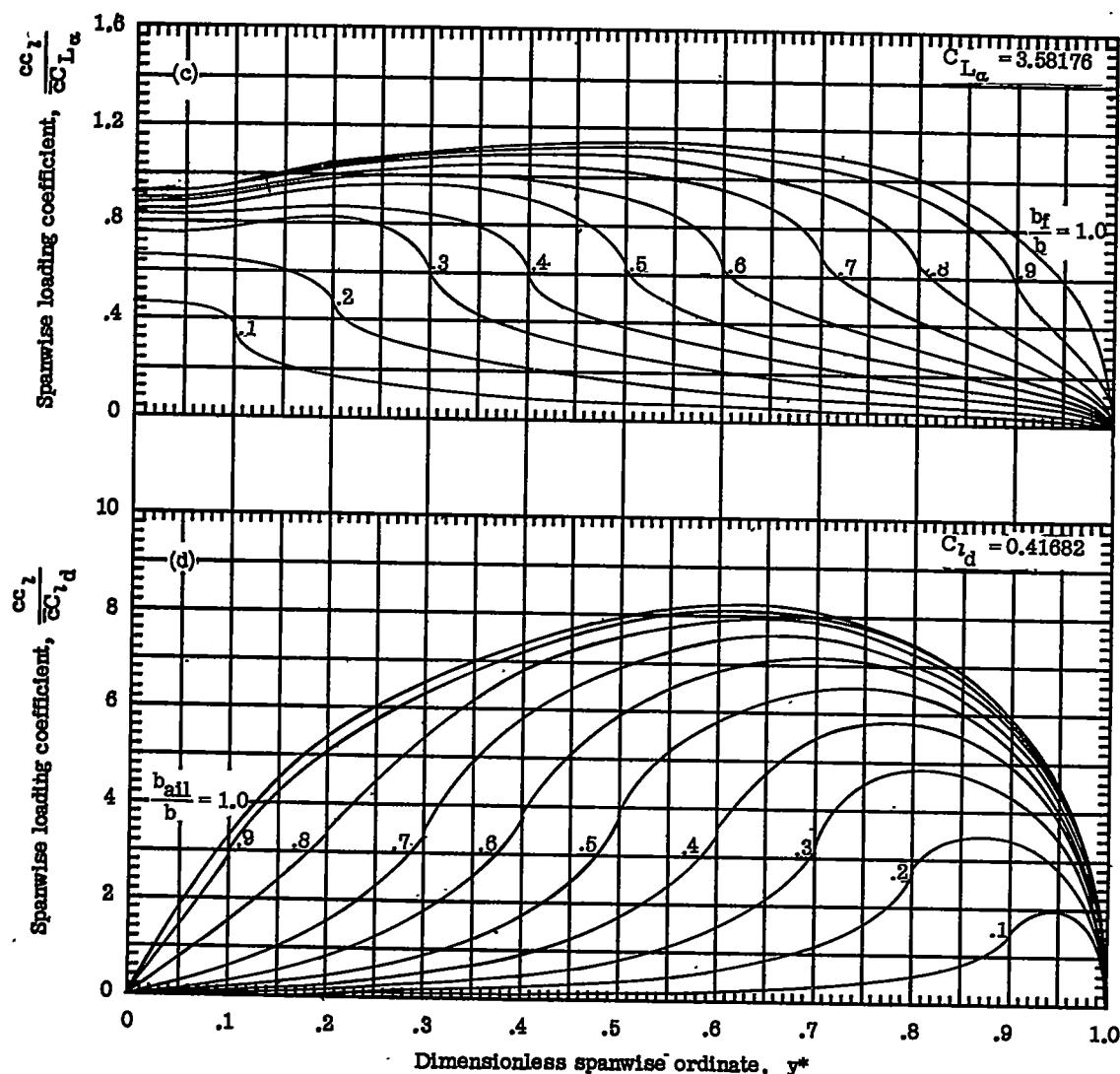
Figure 34.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

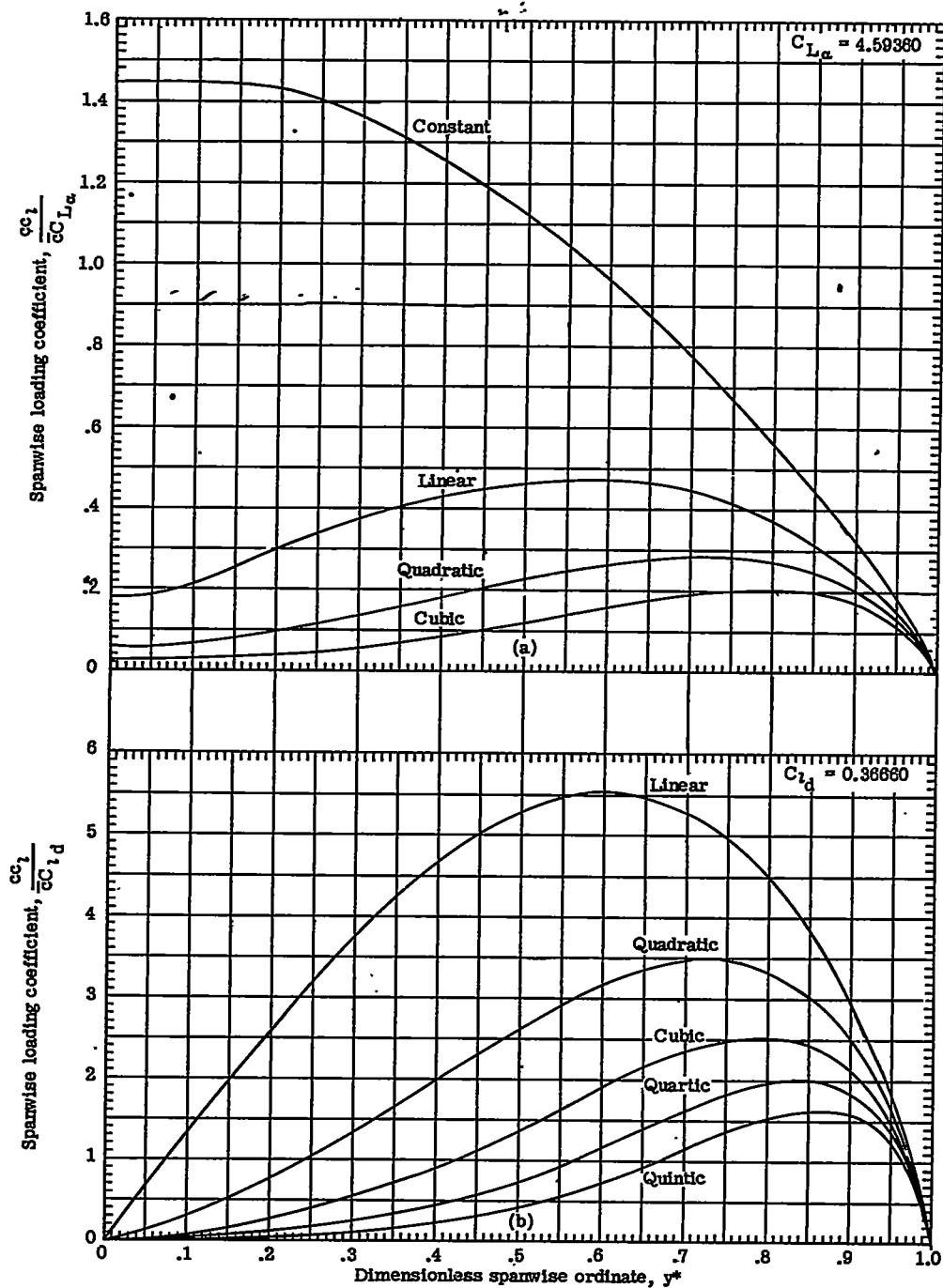
Figure 35.- Spanwise lift distributions for plan form 435 ( $A = 6.0$ ;  $\lambda = 1.50$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

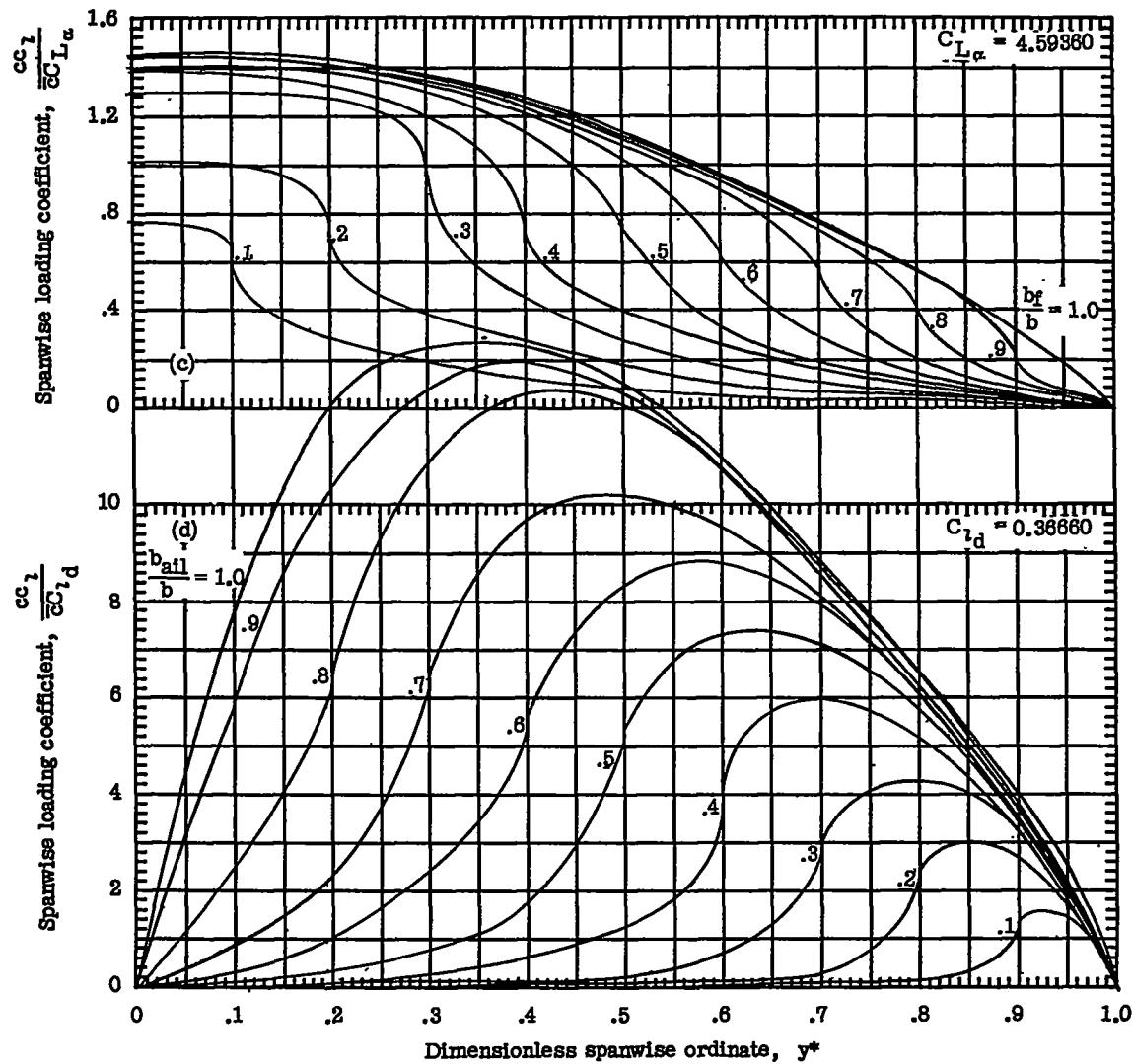
Figure 35.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

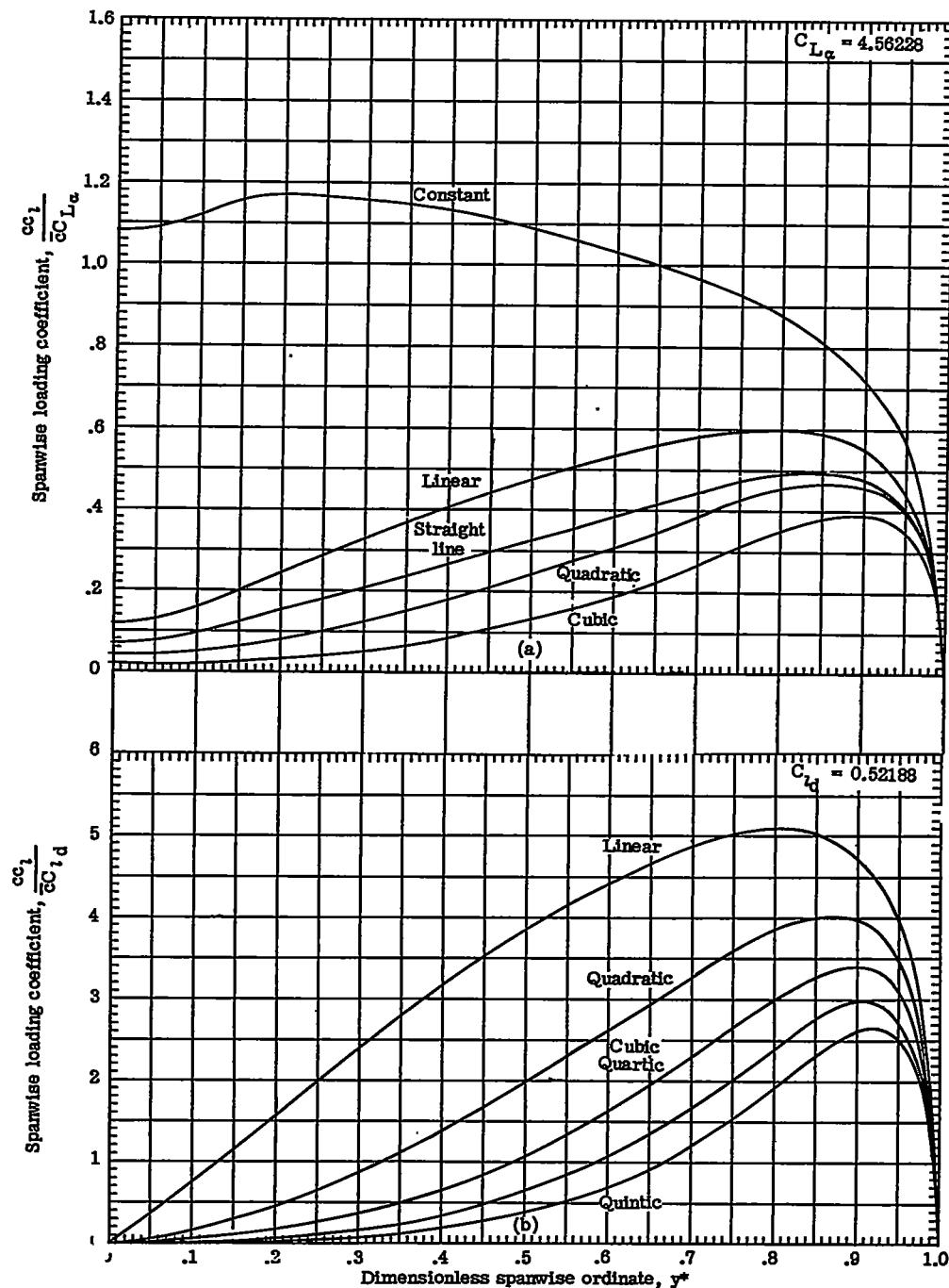
Figure 36.- Spanwise lift distributions for plan form 441 ( $A = 12.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

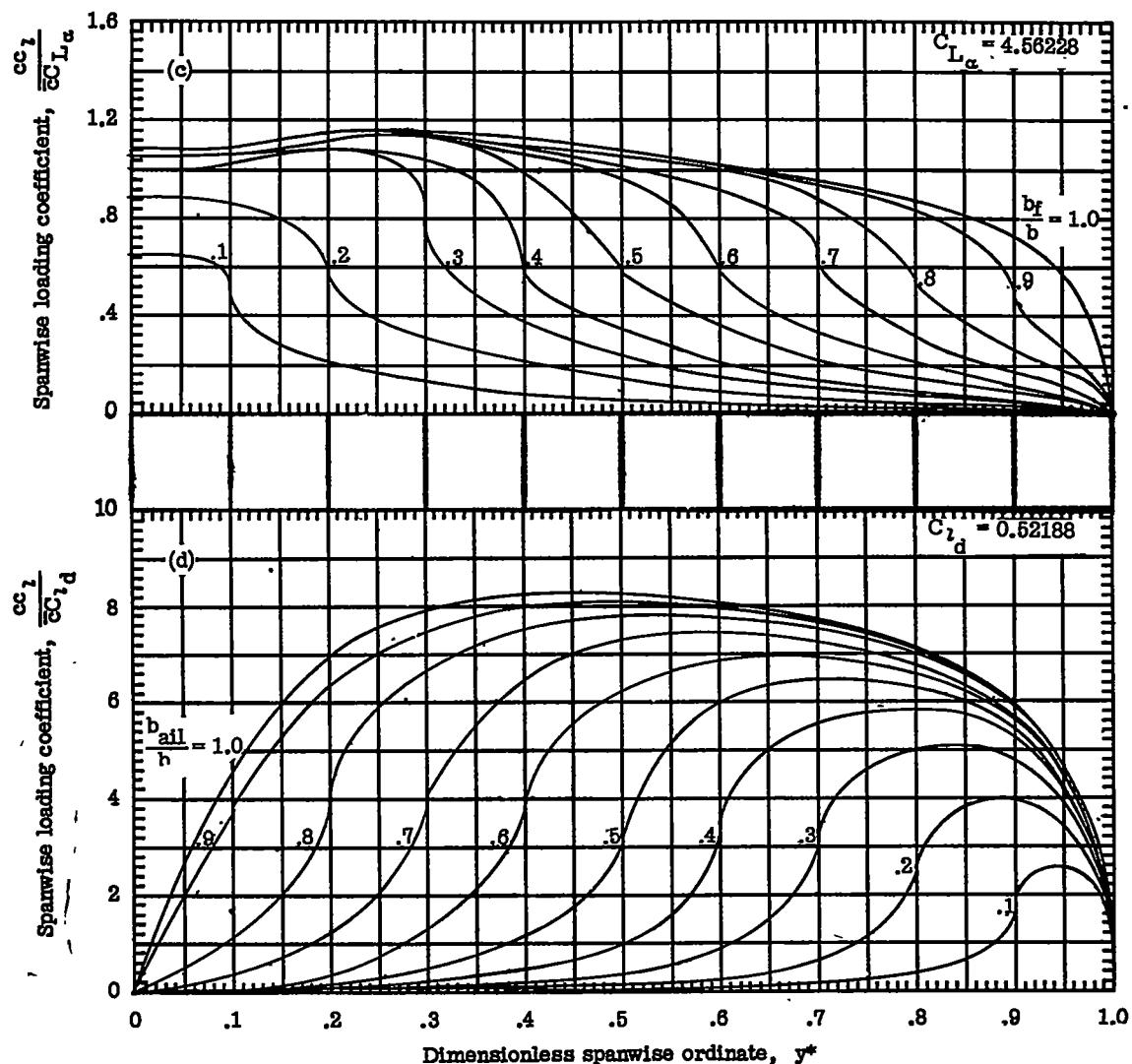
Figure 36.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 37.- Spanwise lift distributions for plan form 443 ( $A = 12.0$ ;  
 $\lambda = 0.50$ ;  $\Lambda = 30^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 37.- Concluded.

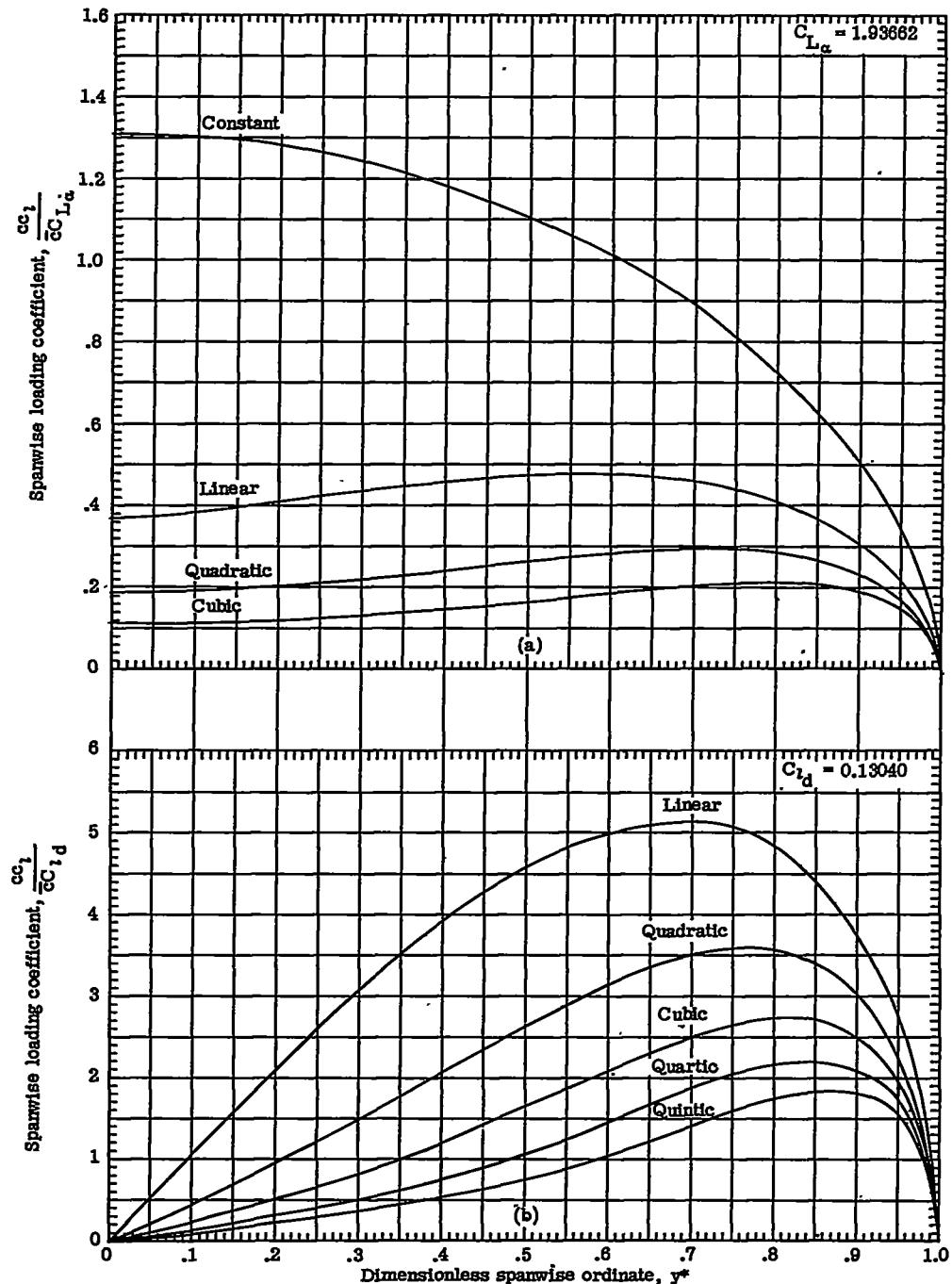
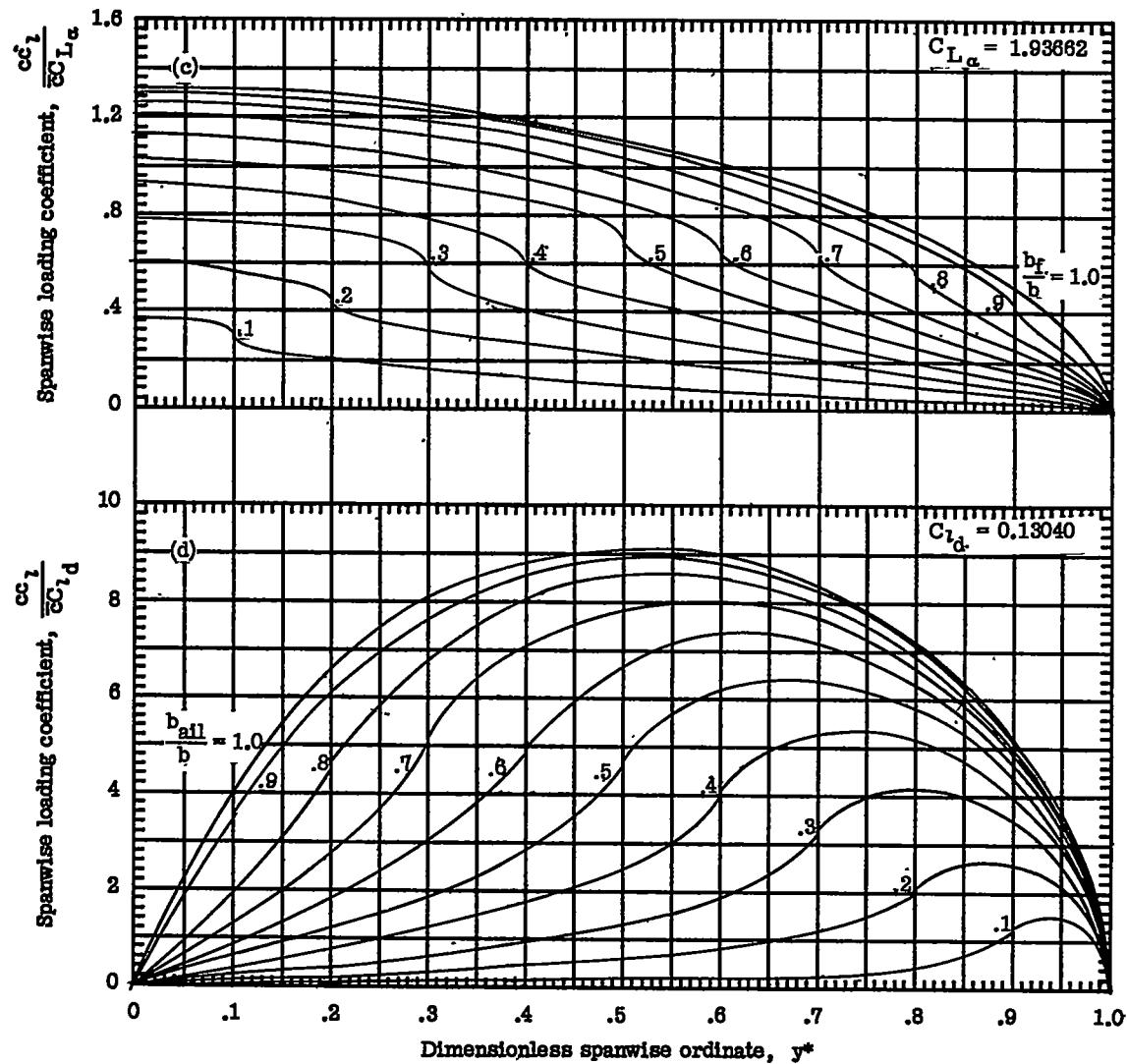


Figure 38.- Spanwise lift distributions for plan form 511 ( $A = 1.5$ ;  $\lambda = 0$ ;  $\Lambda = 45^\circ$ ).



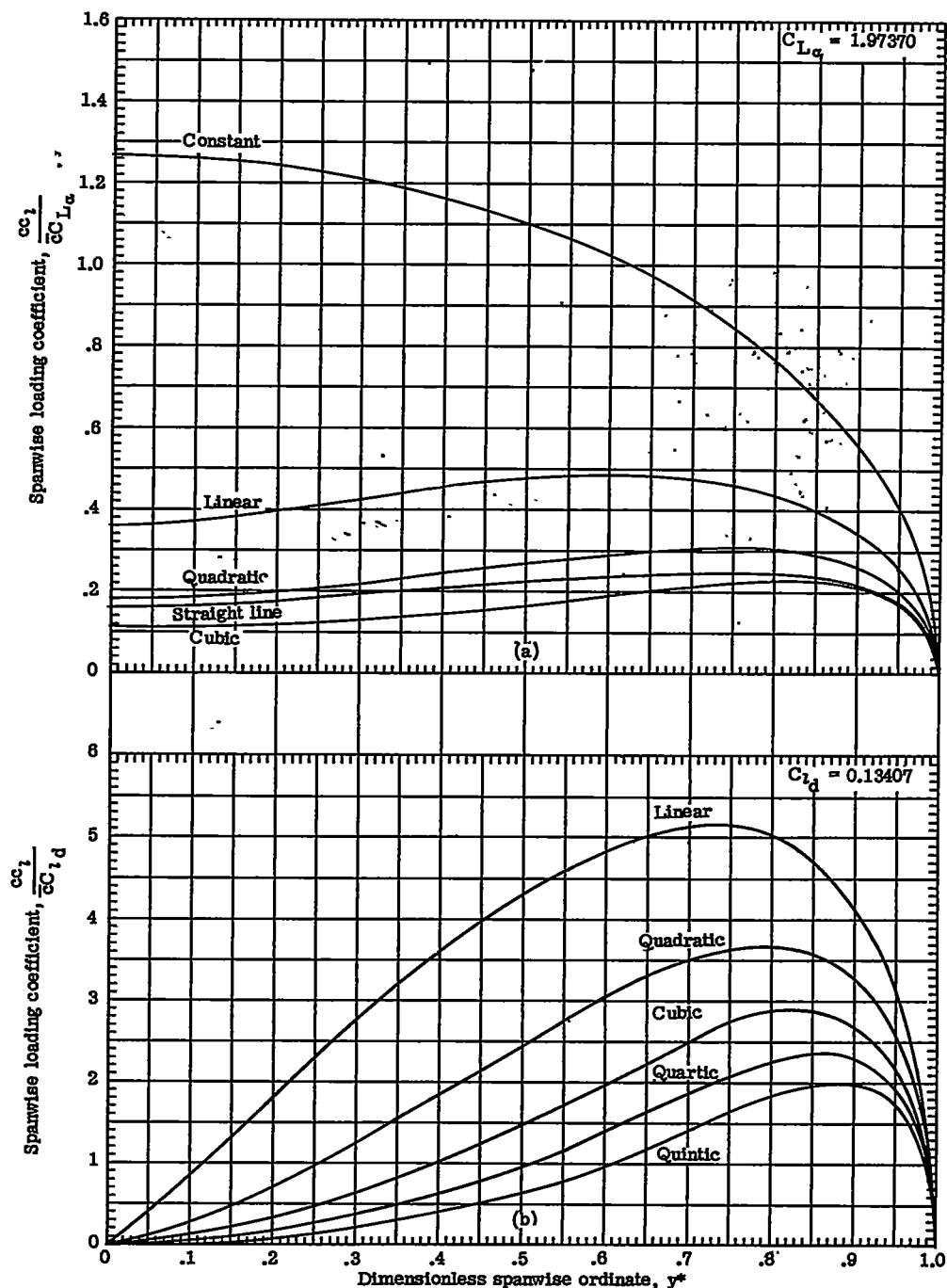
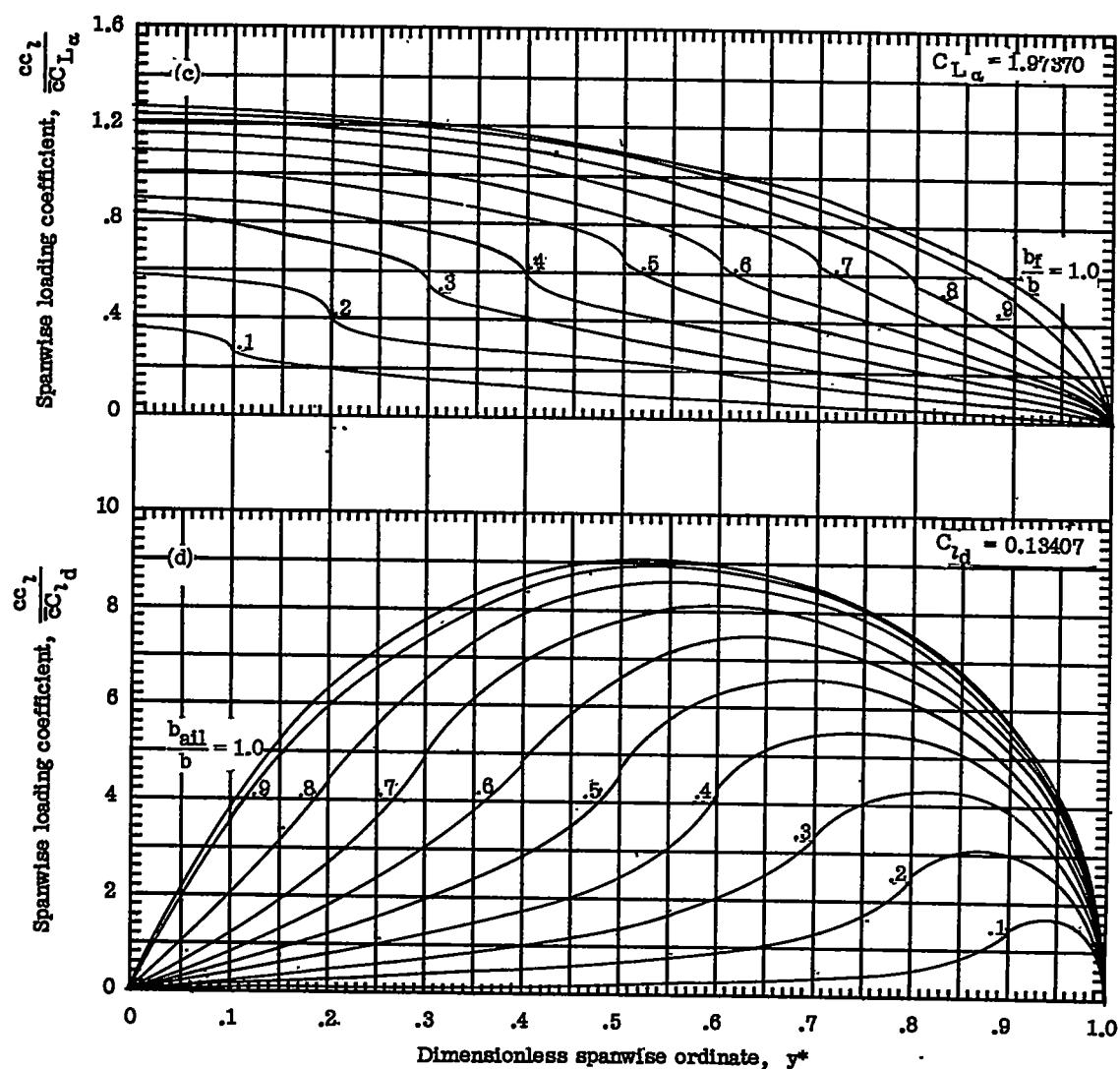


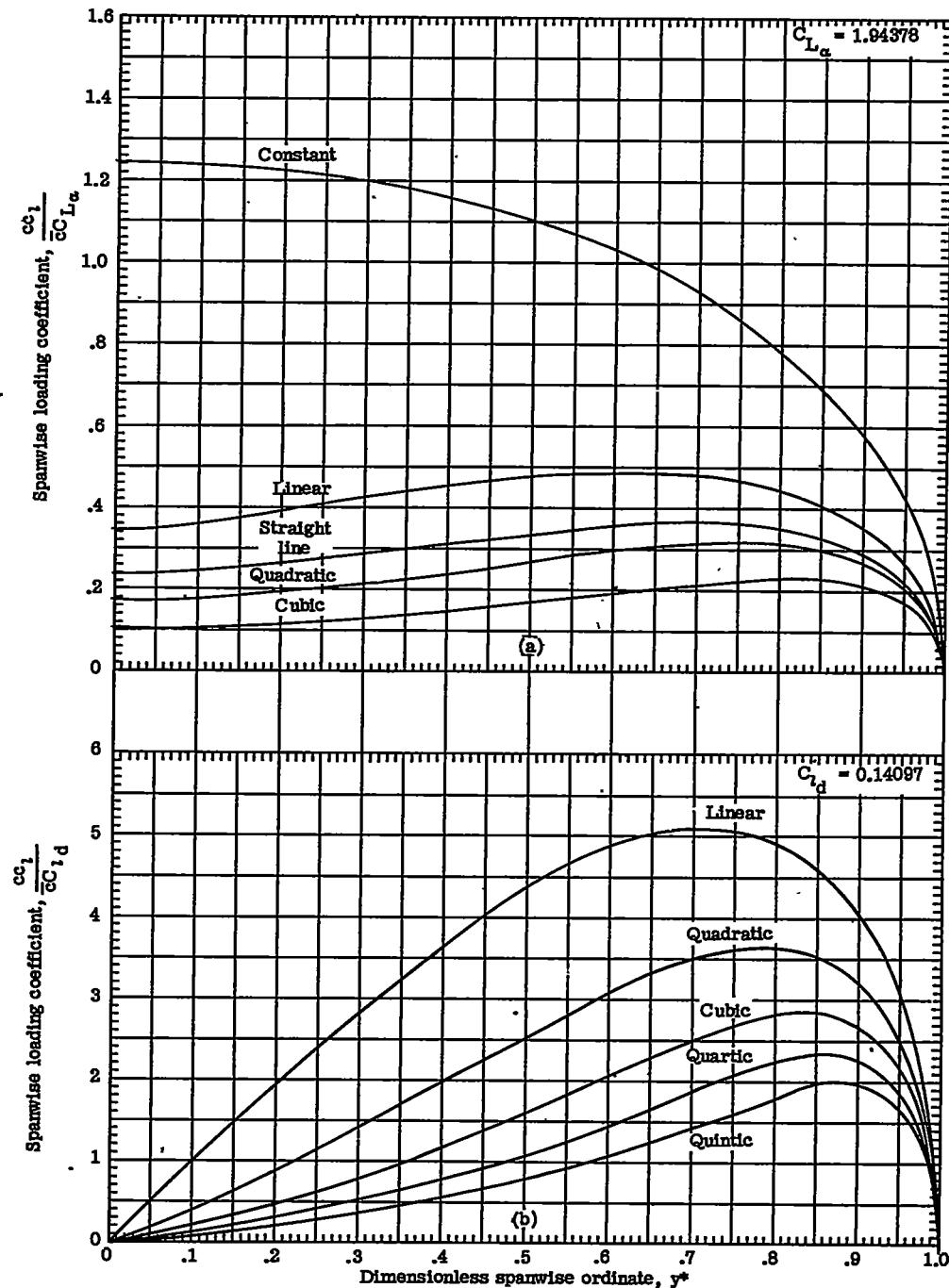
Figure 39.- Spanwise lift distributions for plan form 512 ( $A = 1.5$ ;  $\lambda = 0.25$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

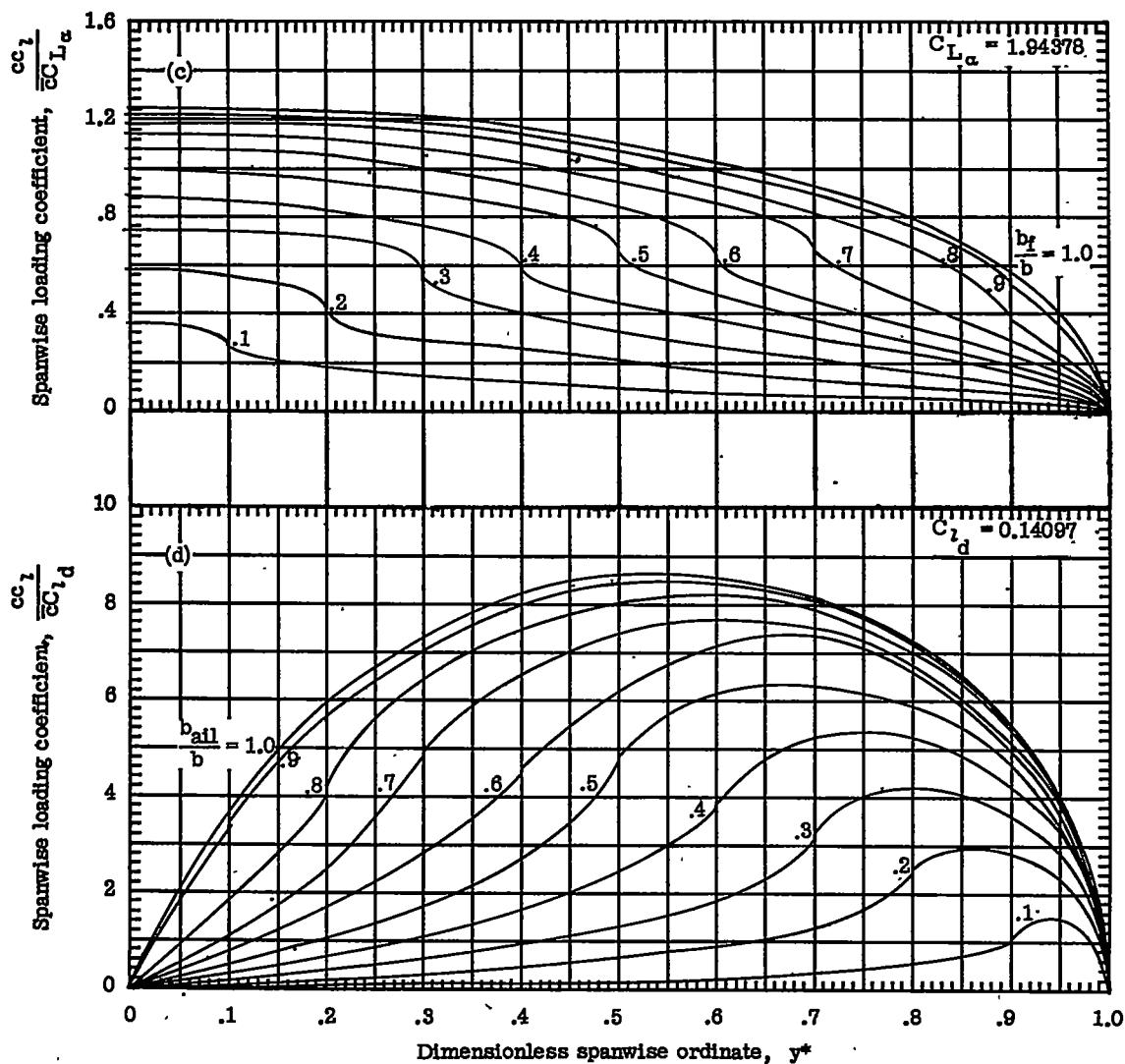
Figure 39.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

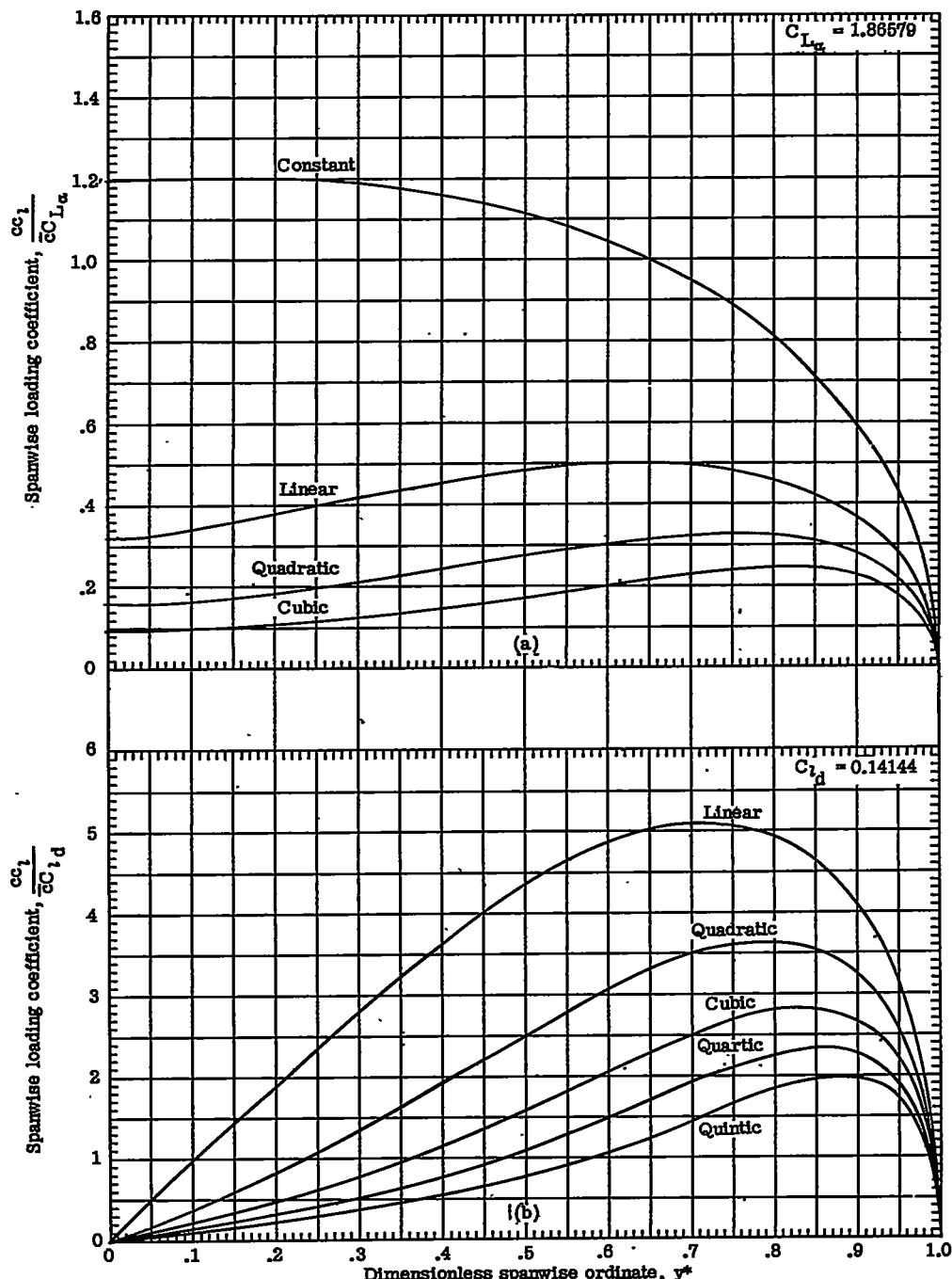
Figure 40.- Spanwise lift distributions for plan form 513 ( $A = 1.5$ ;  $\lambda = 0.50$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

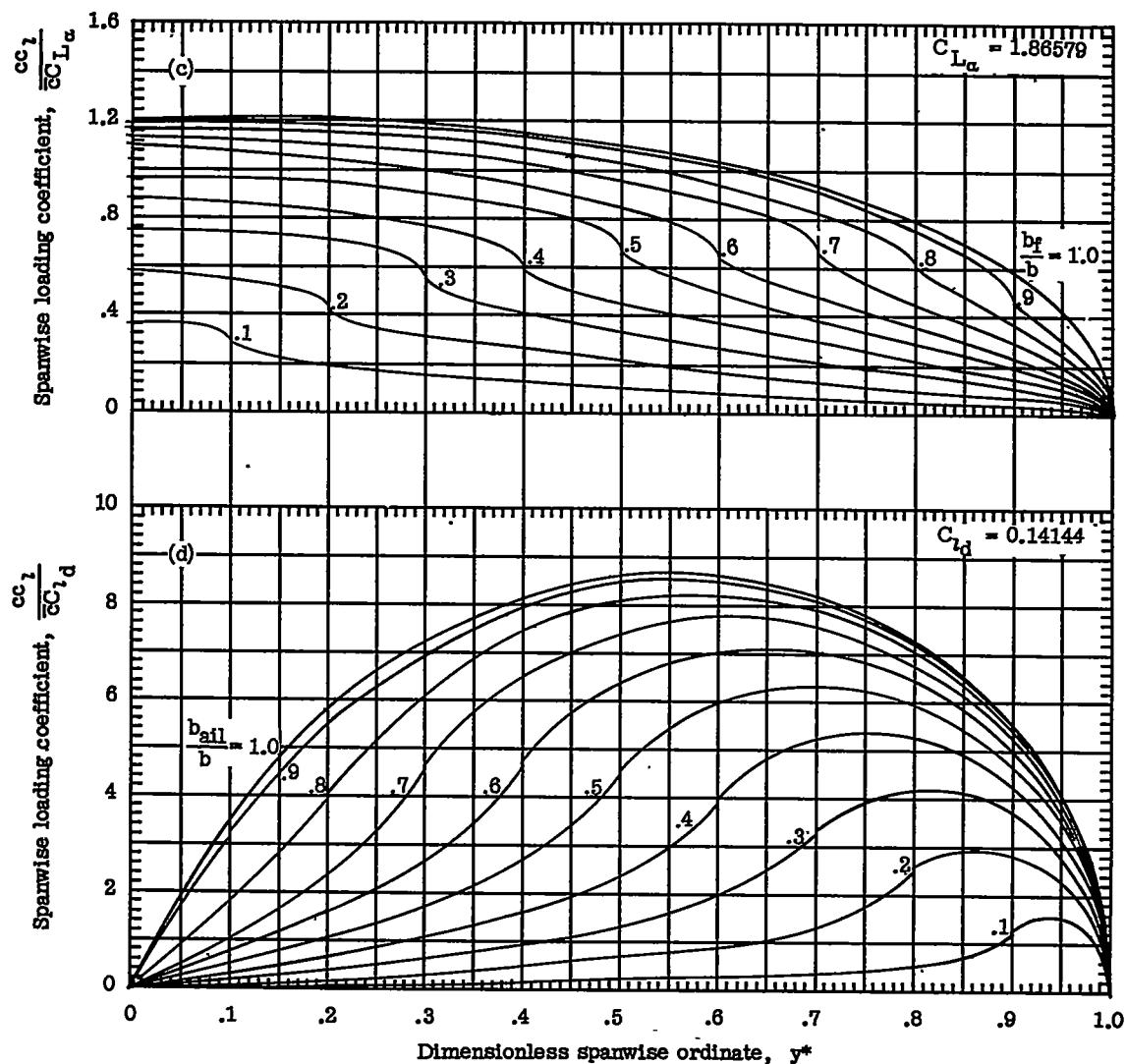
Figure 40.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

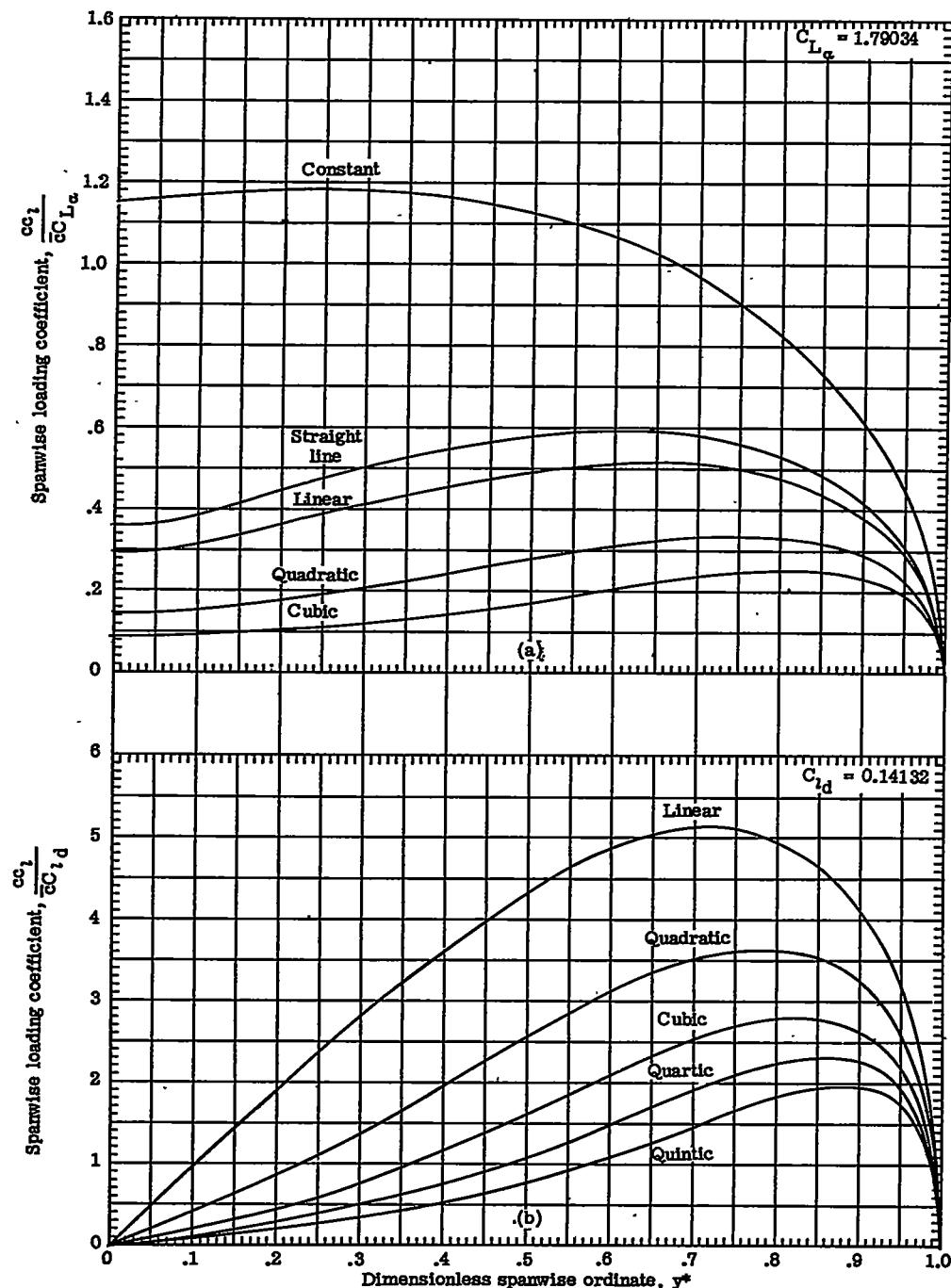
Figure 41.- Spanwise lift distributions for plan form 514 ( $A = 1.5$ ;  
 $\lambda = 1.00$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

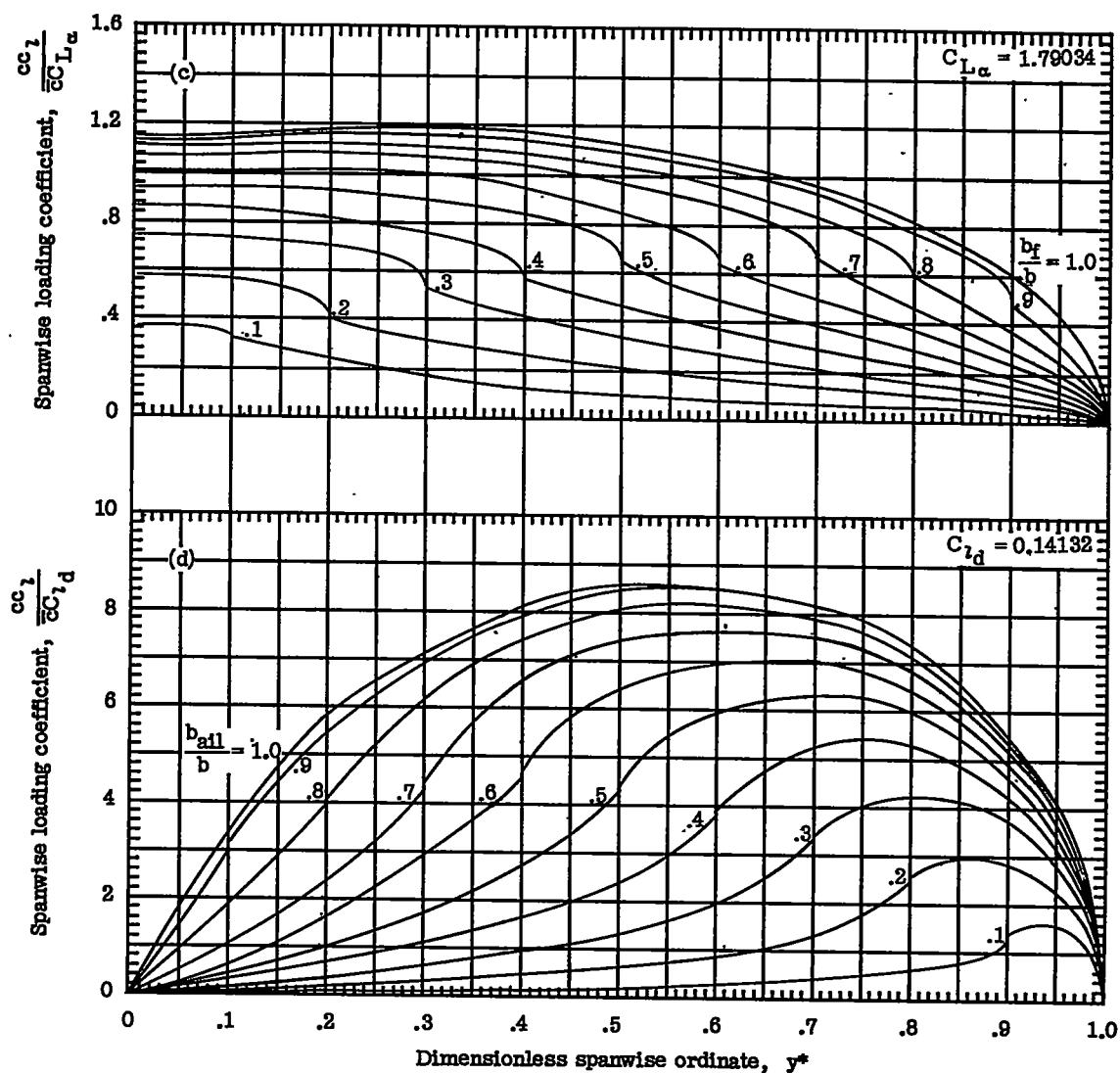
Figure 41.-- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

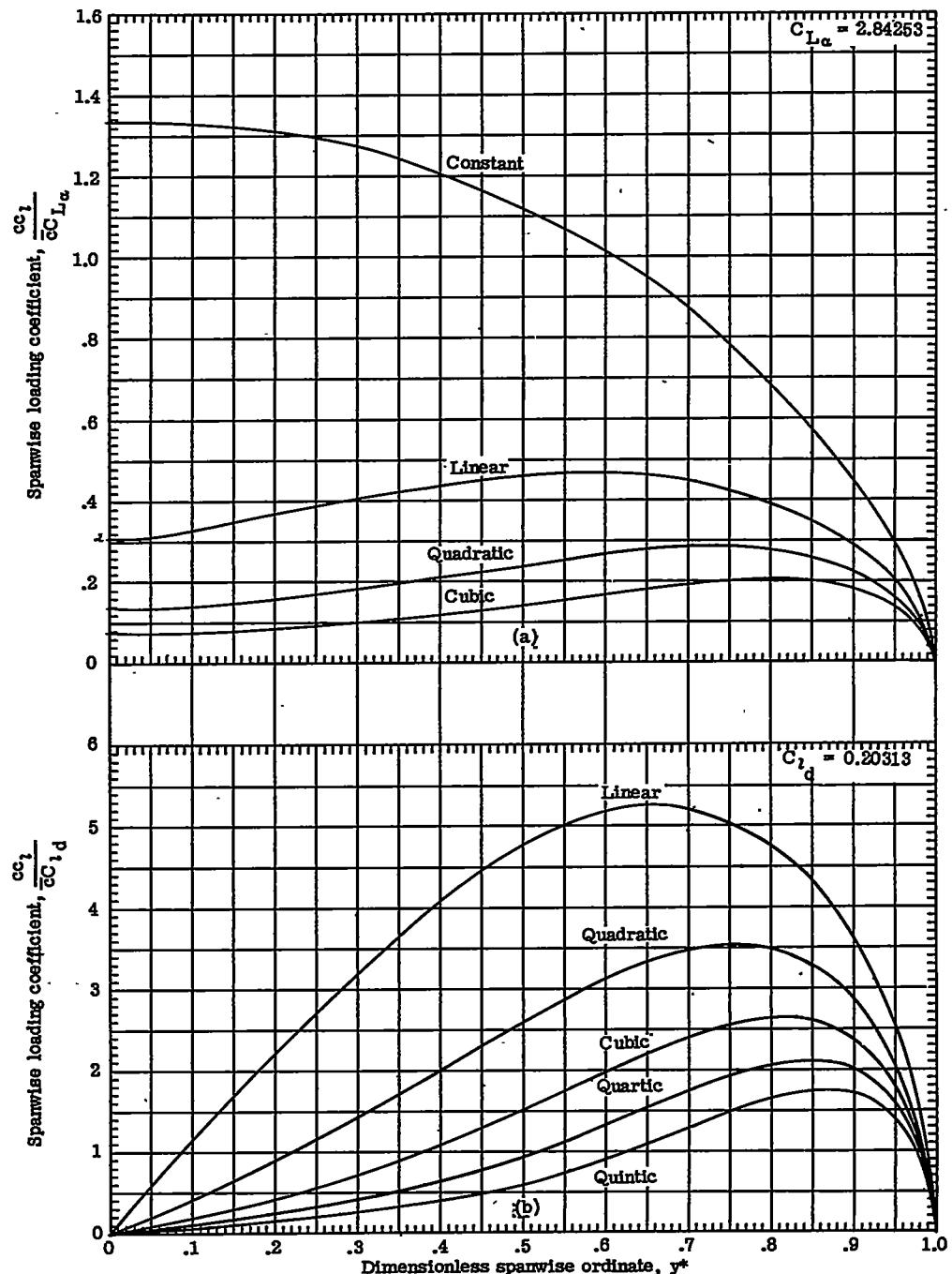
Figure 42.- Spanwise lift distributions for plan form 515 ( $A = 1.5$ ;  
 $\lambda = 1.50$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

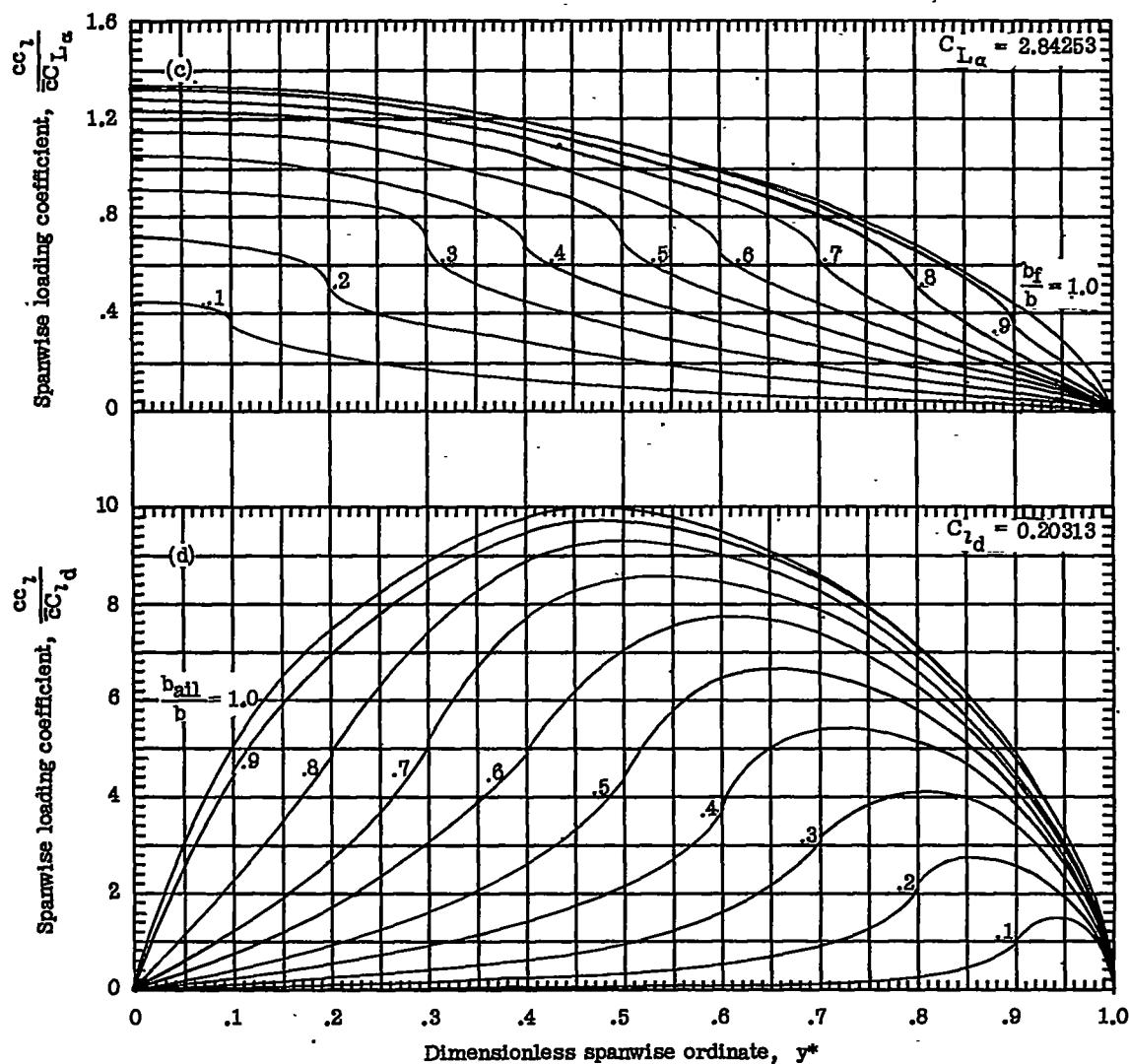
Figure 42.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 43.- Spanwise lift distributions for plan form 521 ( $A = 3.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 43.- Concluded.

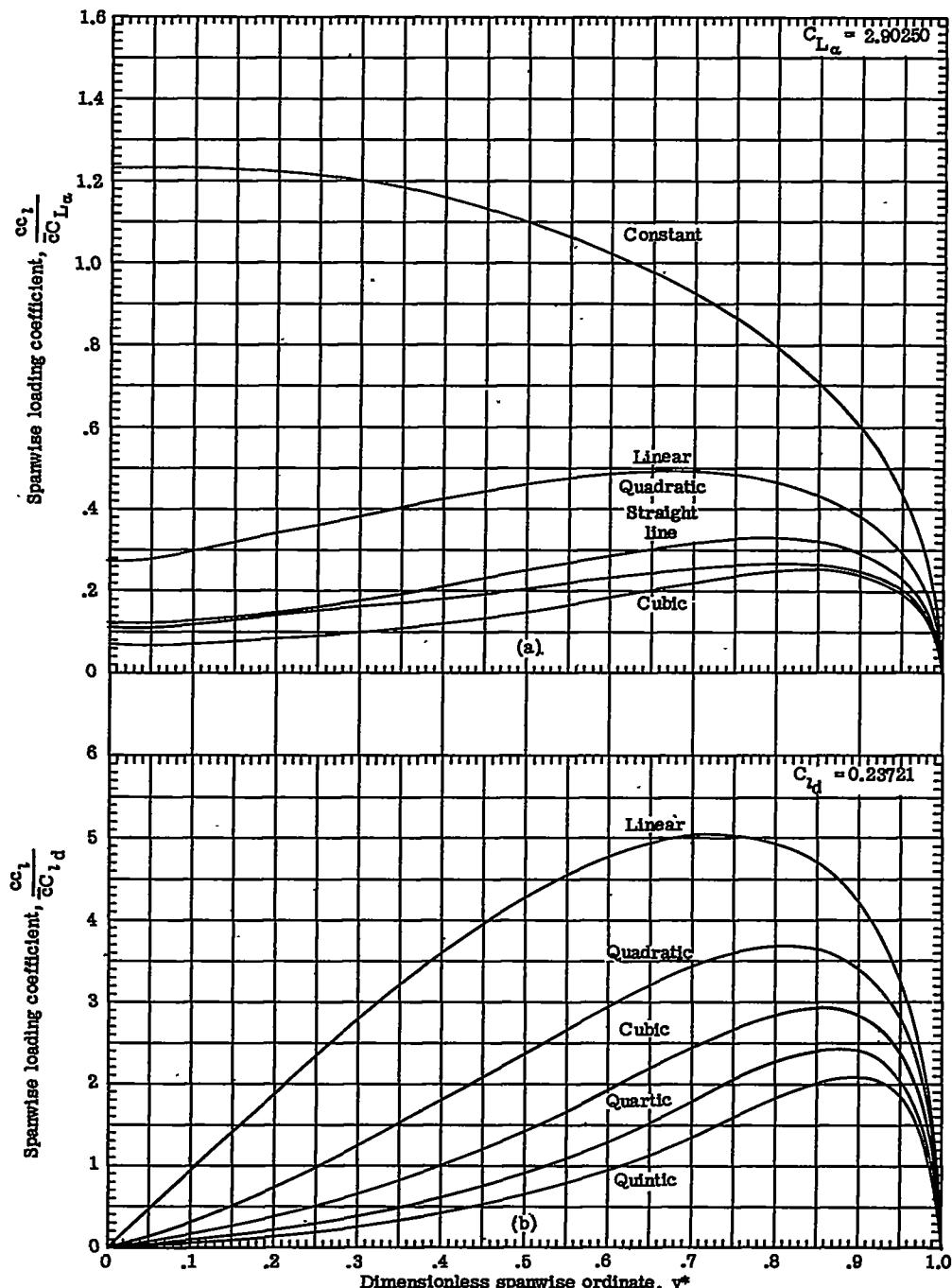


Figure 44.- Spanwise lift distributions for plan form 522 ( $A = 3.0$ ;  $\lambda = 0.25$ ;  $\Lambda = 45^\circ$ ).

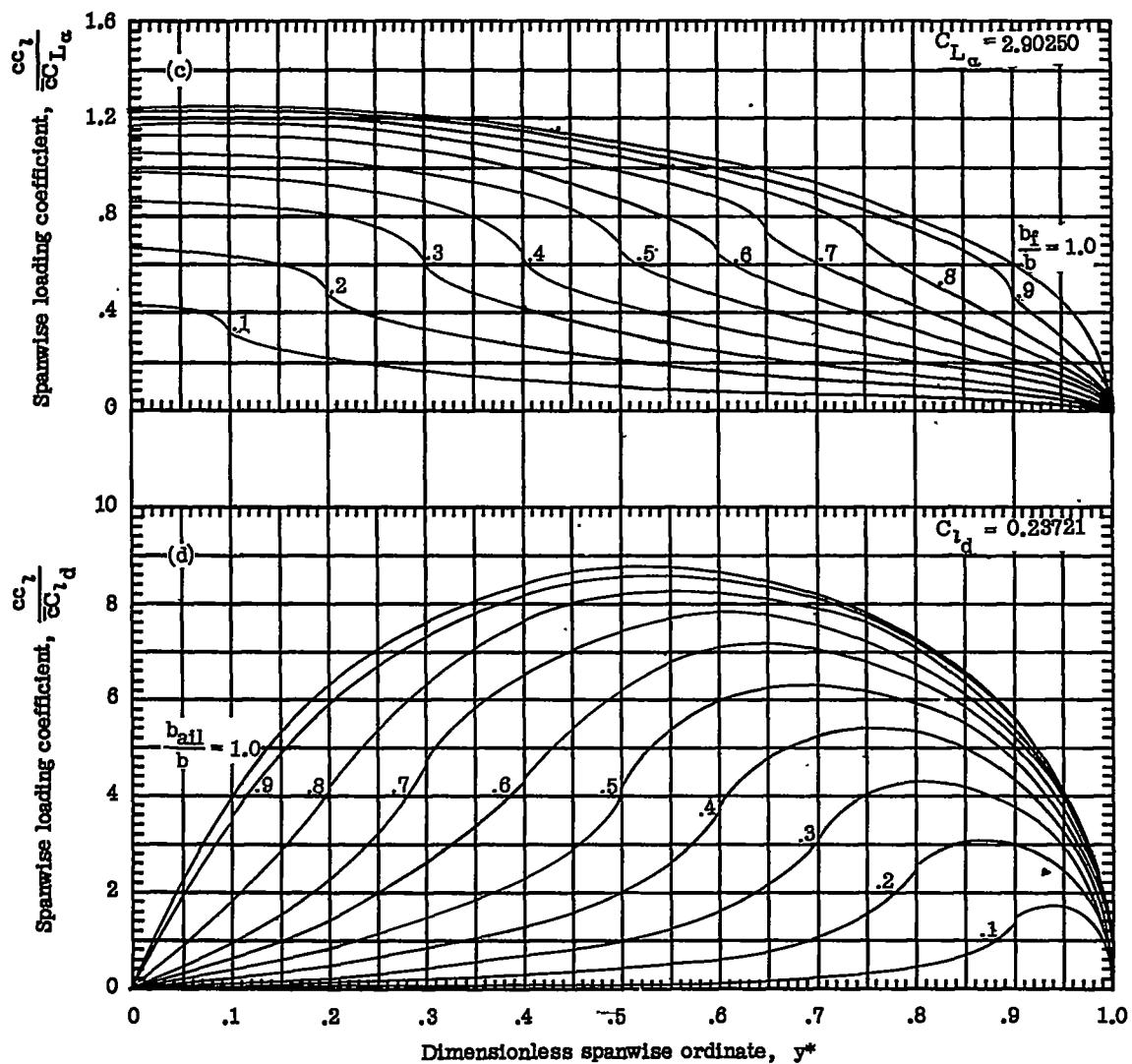
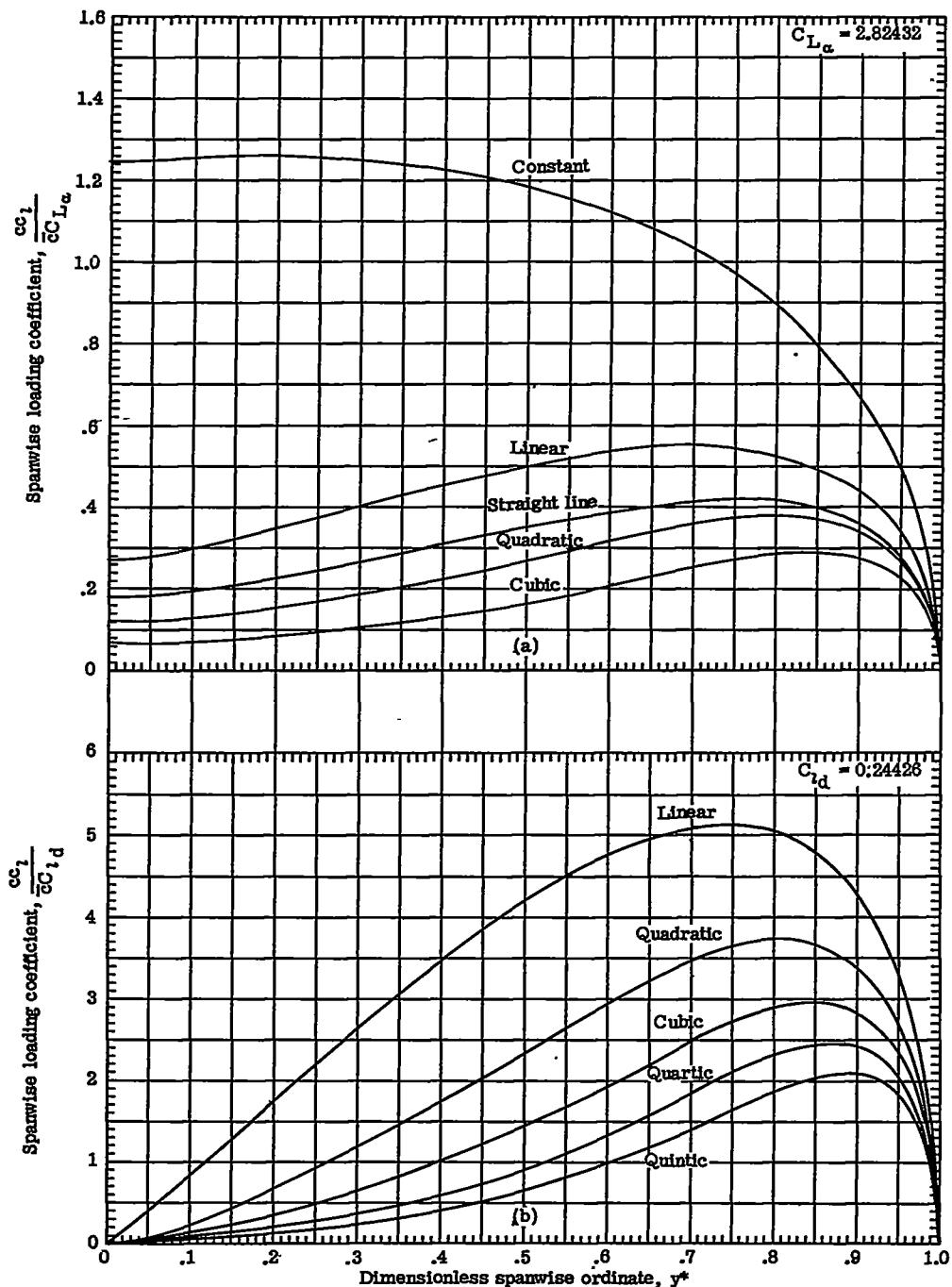


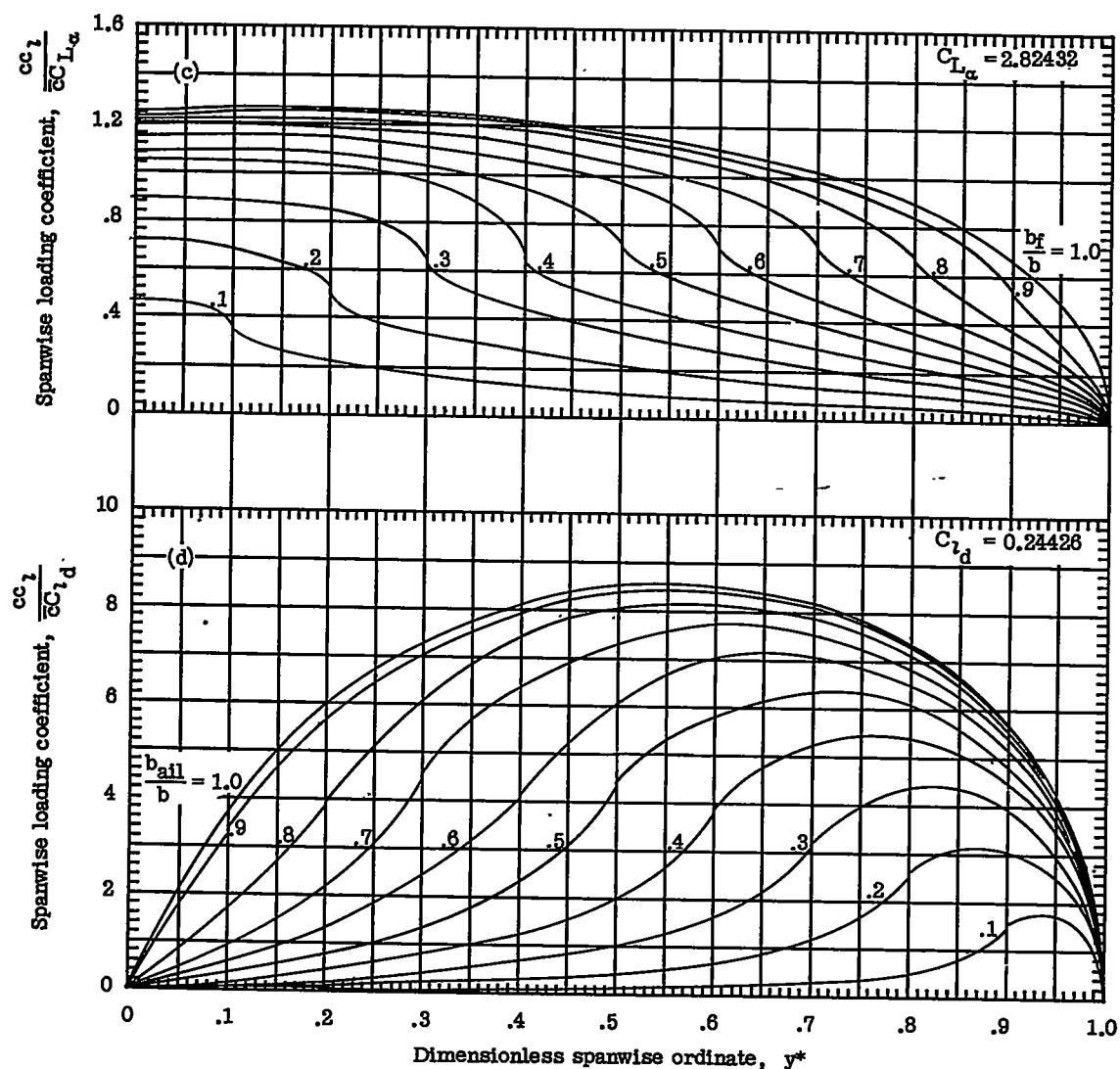
Figure 44.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 45.- Spanwise lift distributions for plan form 523 ( $A = 3.0$ ;  
 $\lambda = 0.50$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 45.- Concluded.

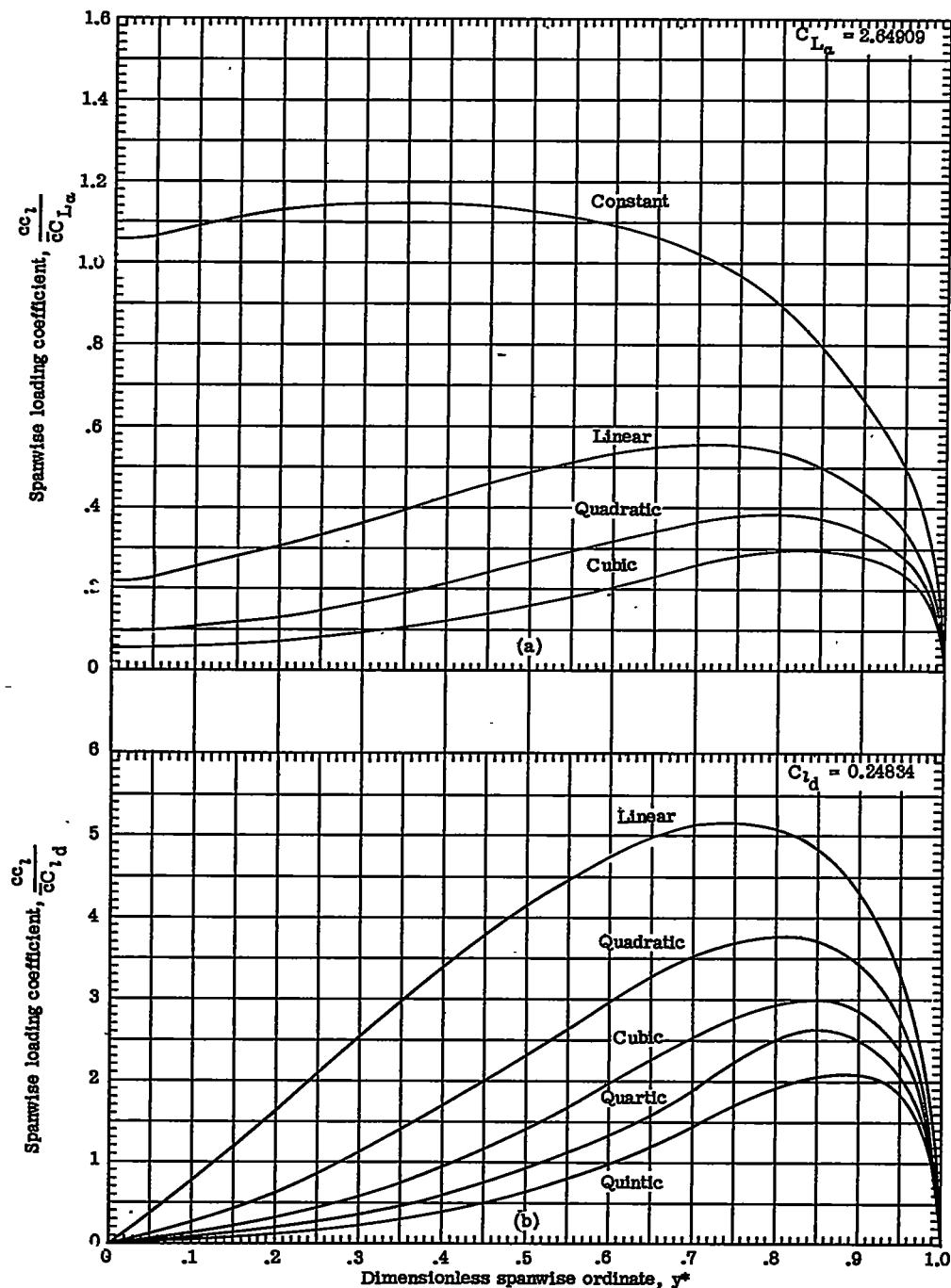
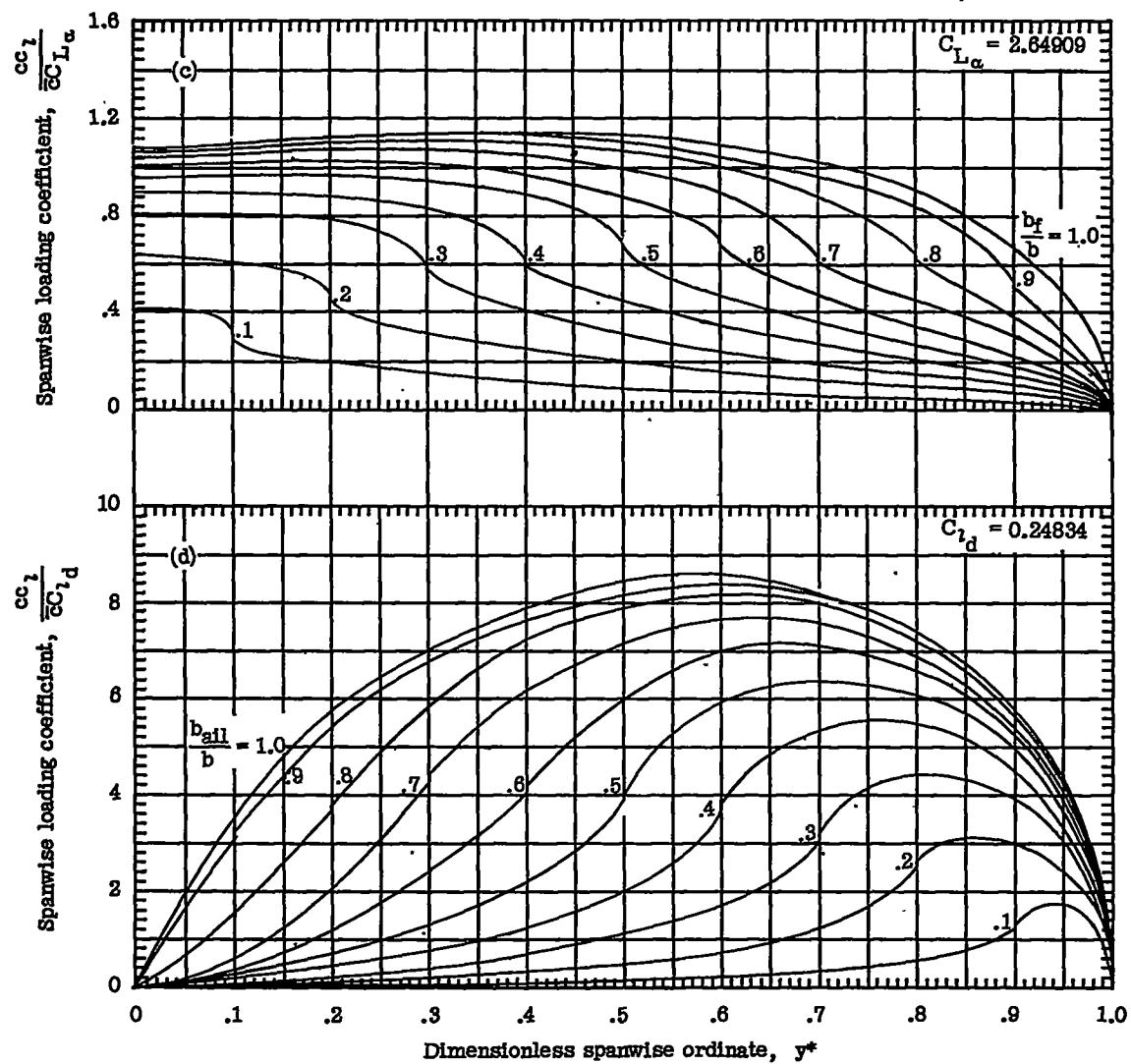


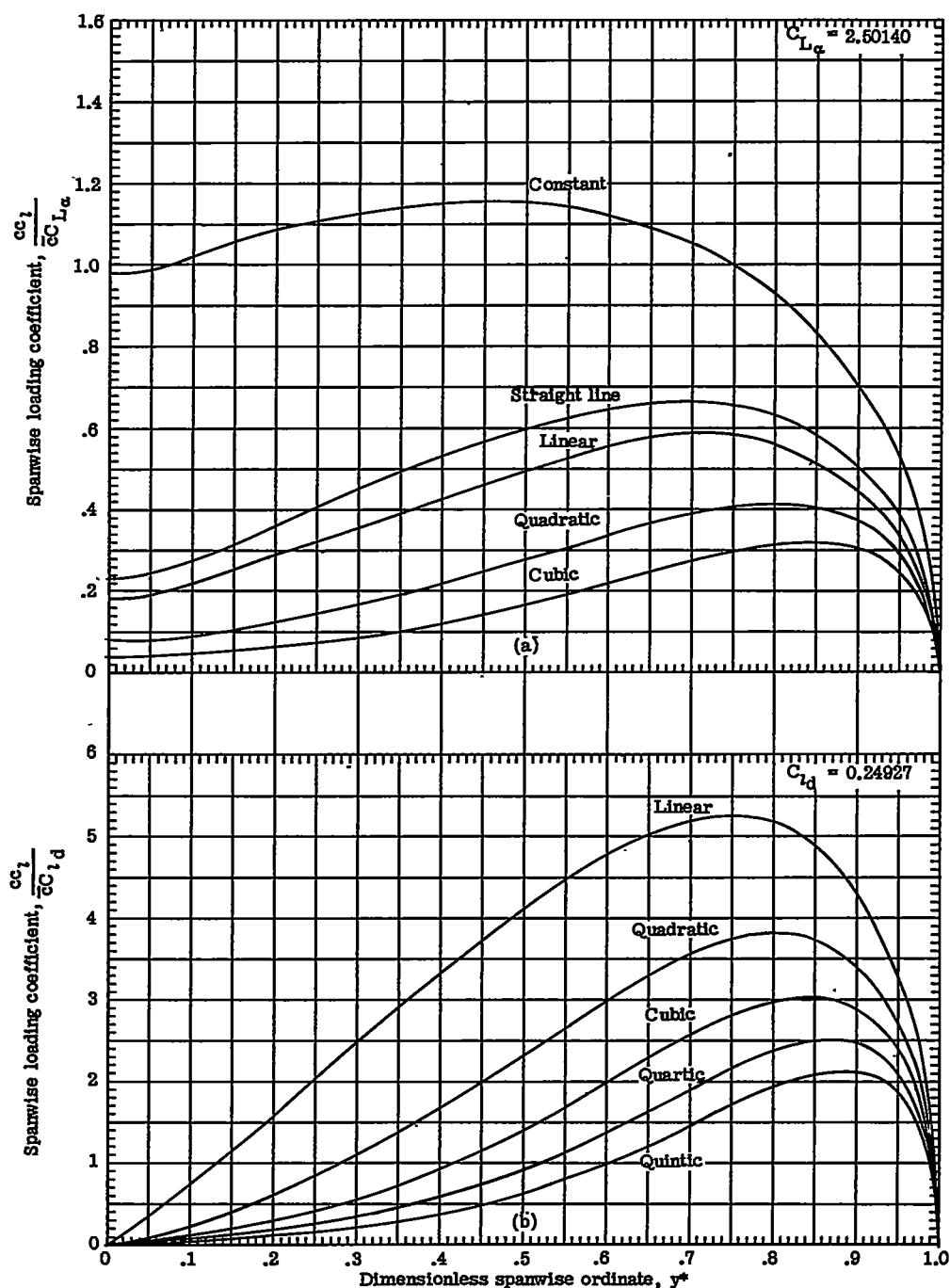
Figure 46.- Spanwise lift distributions for plan form 524 ( $A = 3.0$ ;  $\lambda = 1.00$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 46.-- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 47.- Spanwise lift distributions for plan form 525 ( $A = 3.0$ ;  
 $\lambda = 1.50$ ;  $\Lambda = 45^\circ$ ).

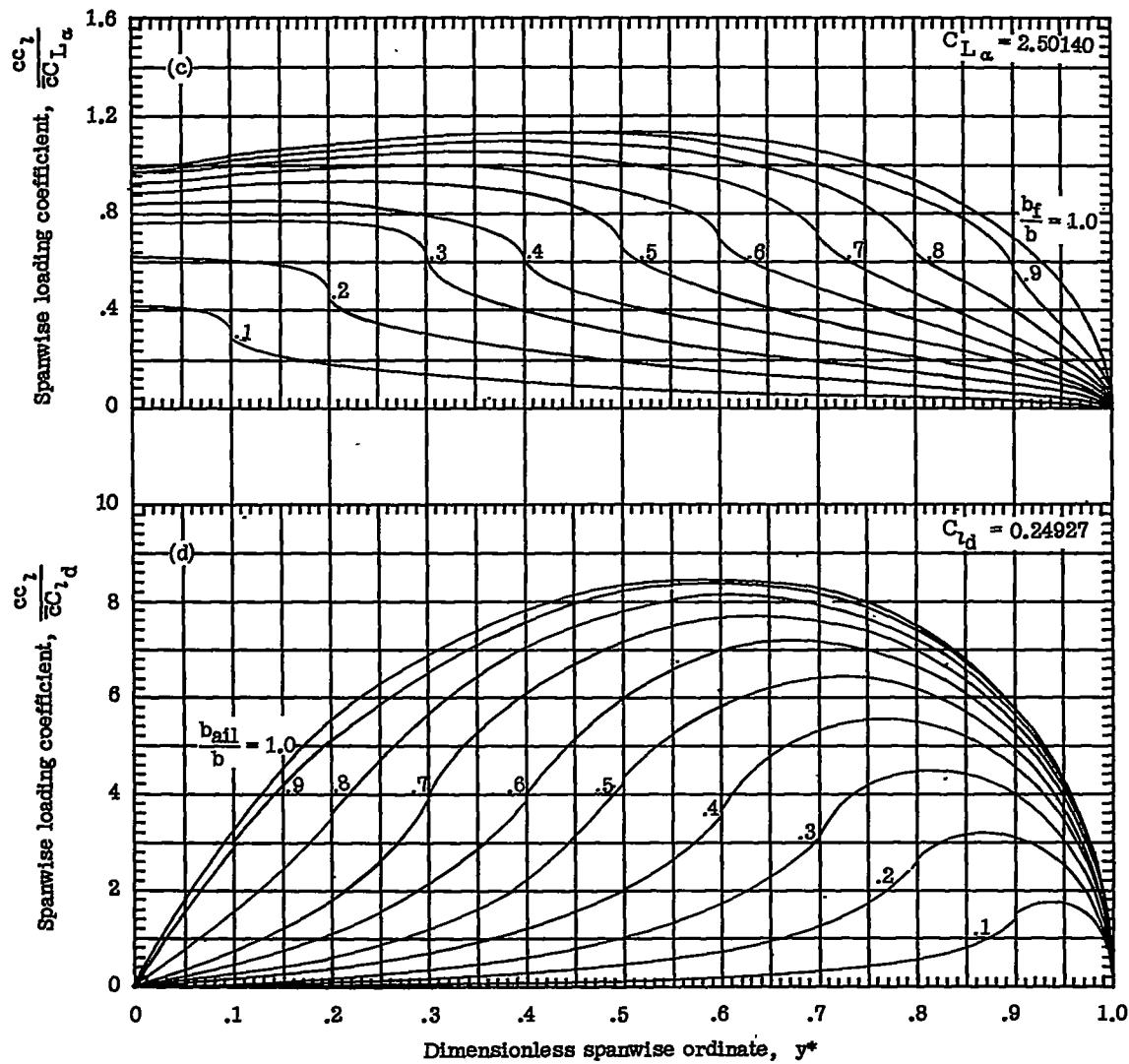
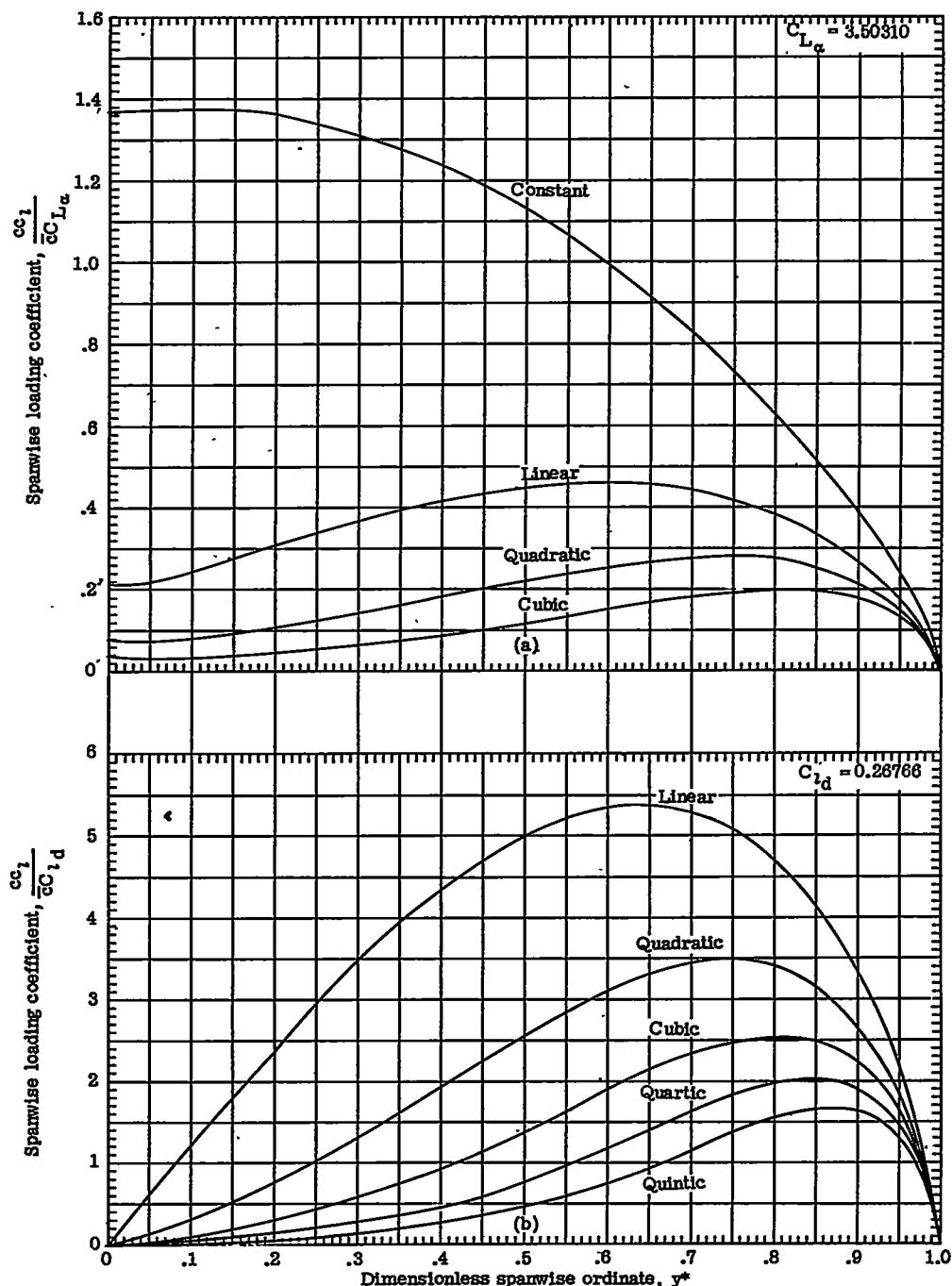


Figure 47.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 48.- Spanwise lift distributions for plan form 531 ( $A = 6.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 45^\circ$ ).

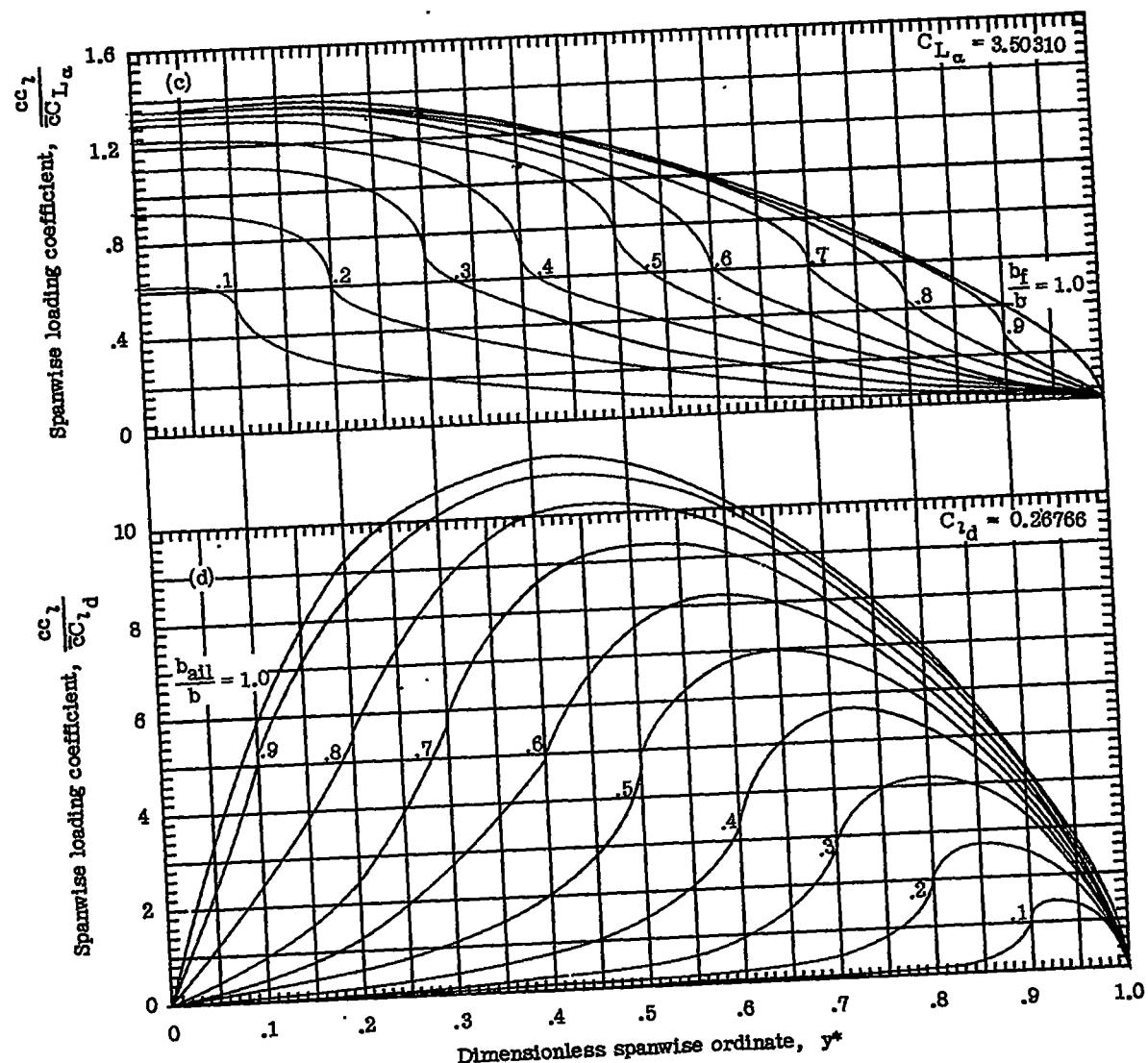


Figure 48.- Concluded.

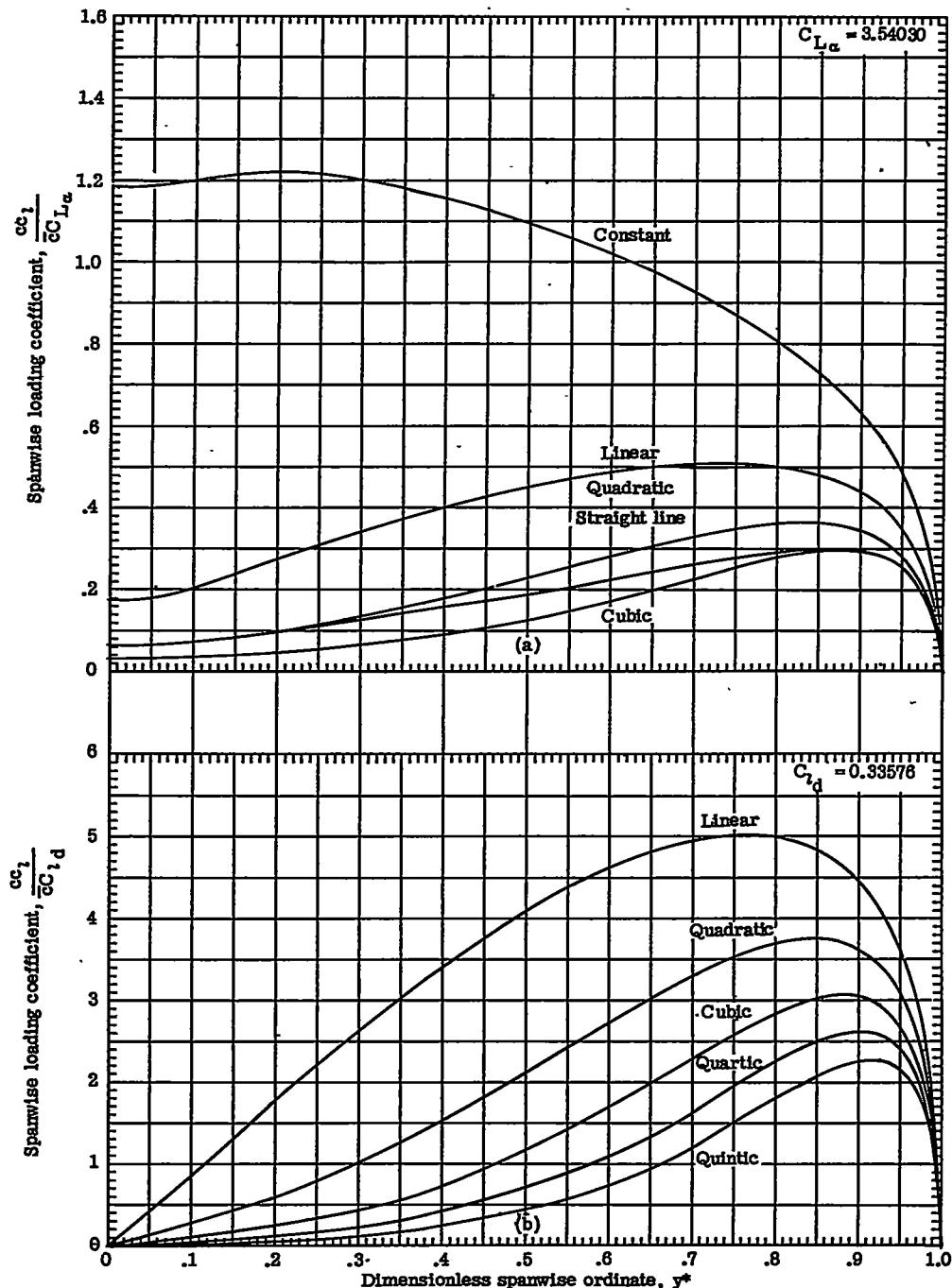
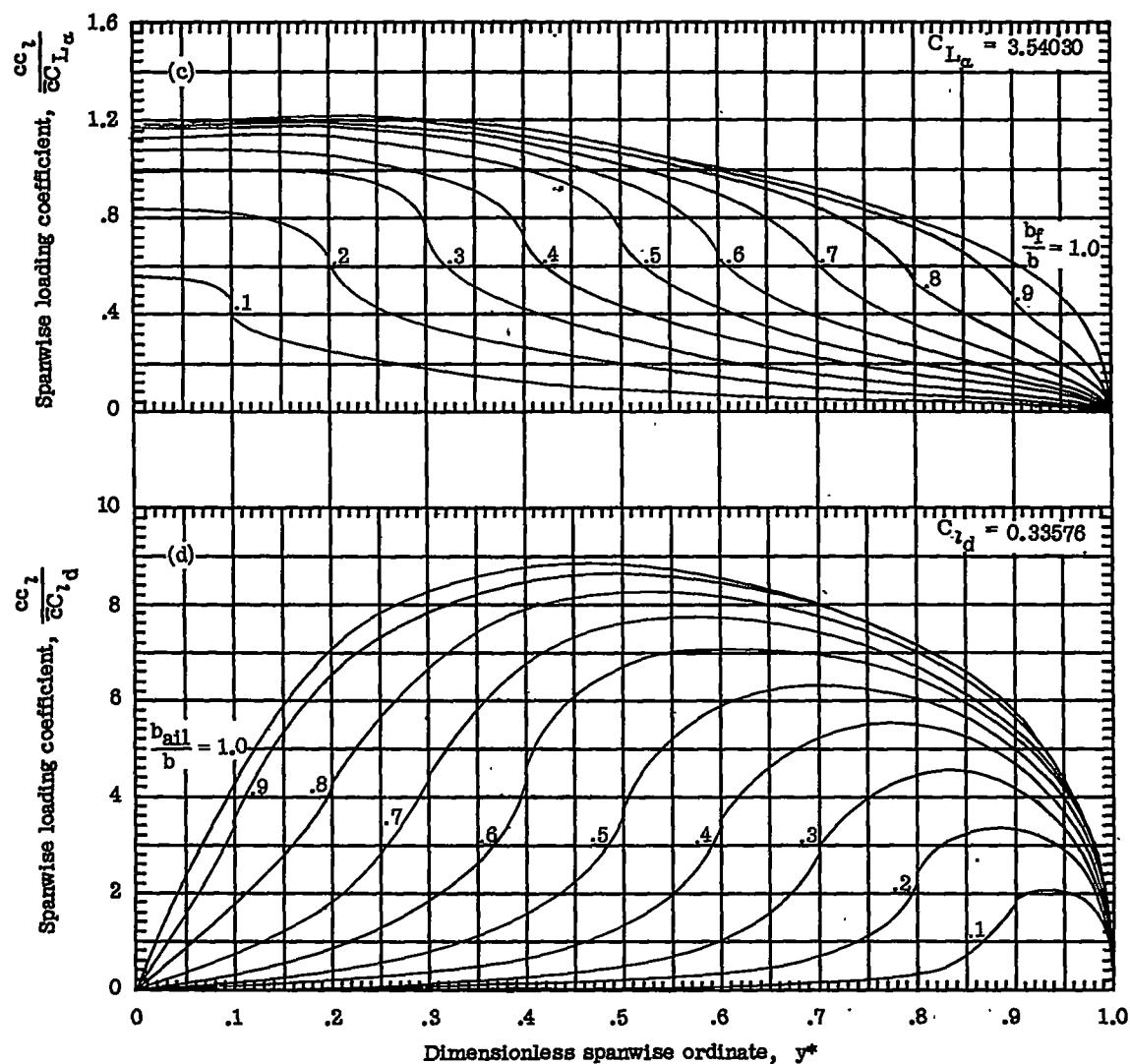


Figure 49.- Spanwise lift distributions for plan form 532 ( $A = 6.0$ ;  
 $\lambda = 0.25$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 49.- Concluded.

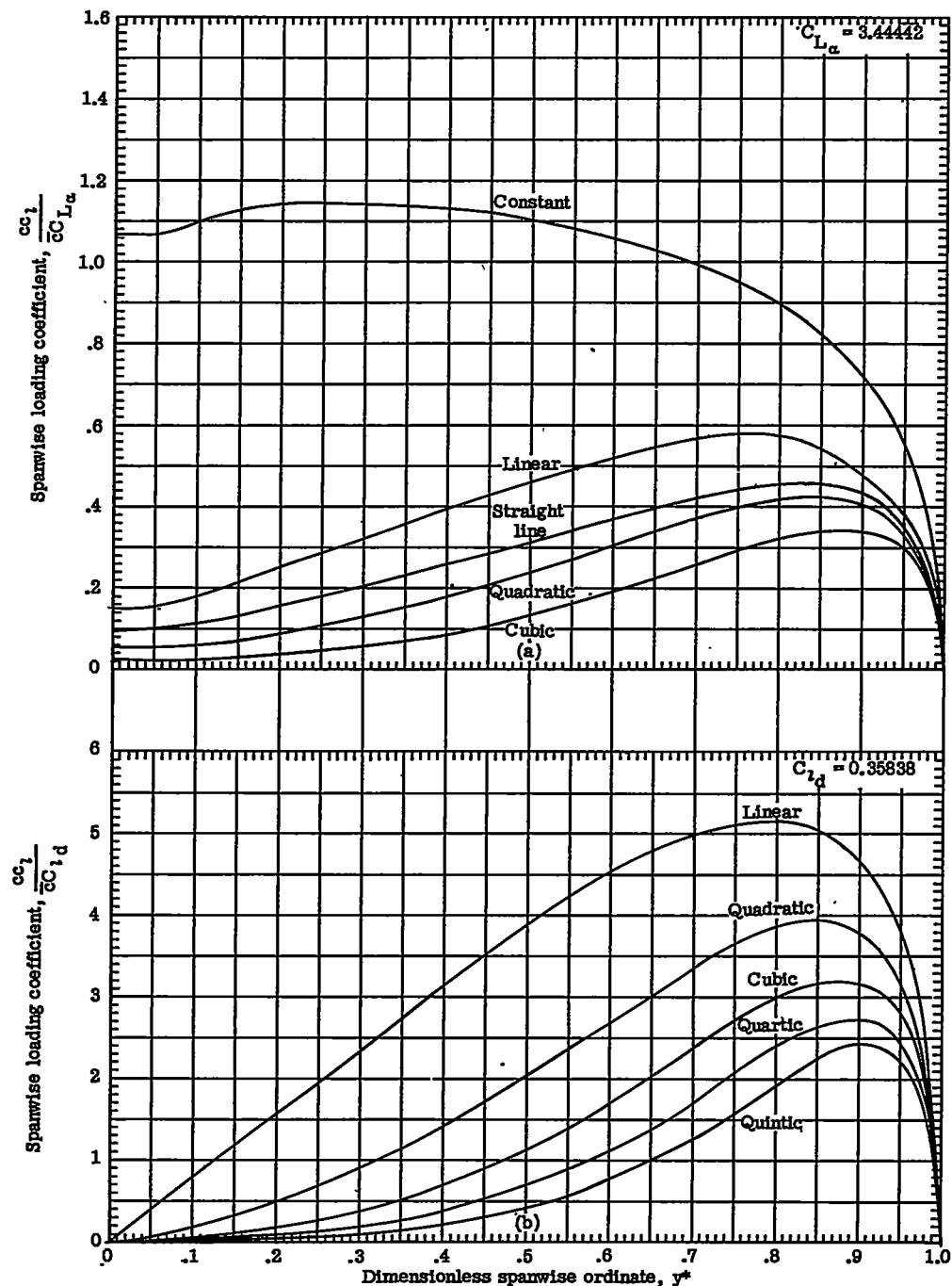


Figure 50.- Spanwise lift distributions for plan form 533 ( $A = 6.0$ ;  
 $\lambda = 0.50$ ;  $\Lambda = 45^\circ$ ).

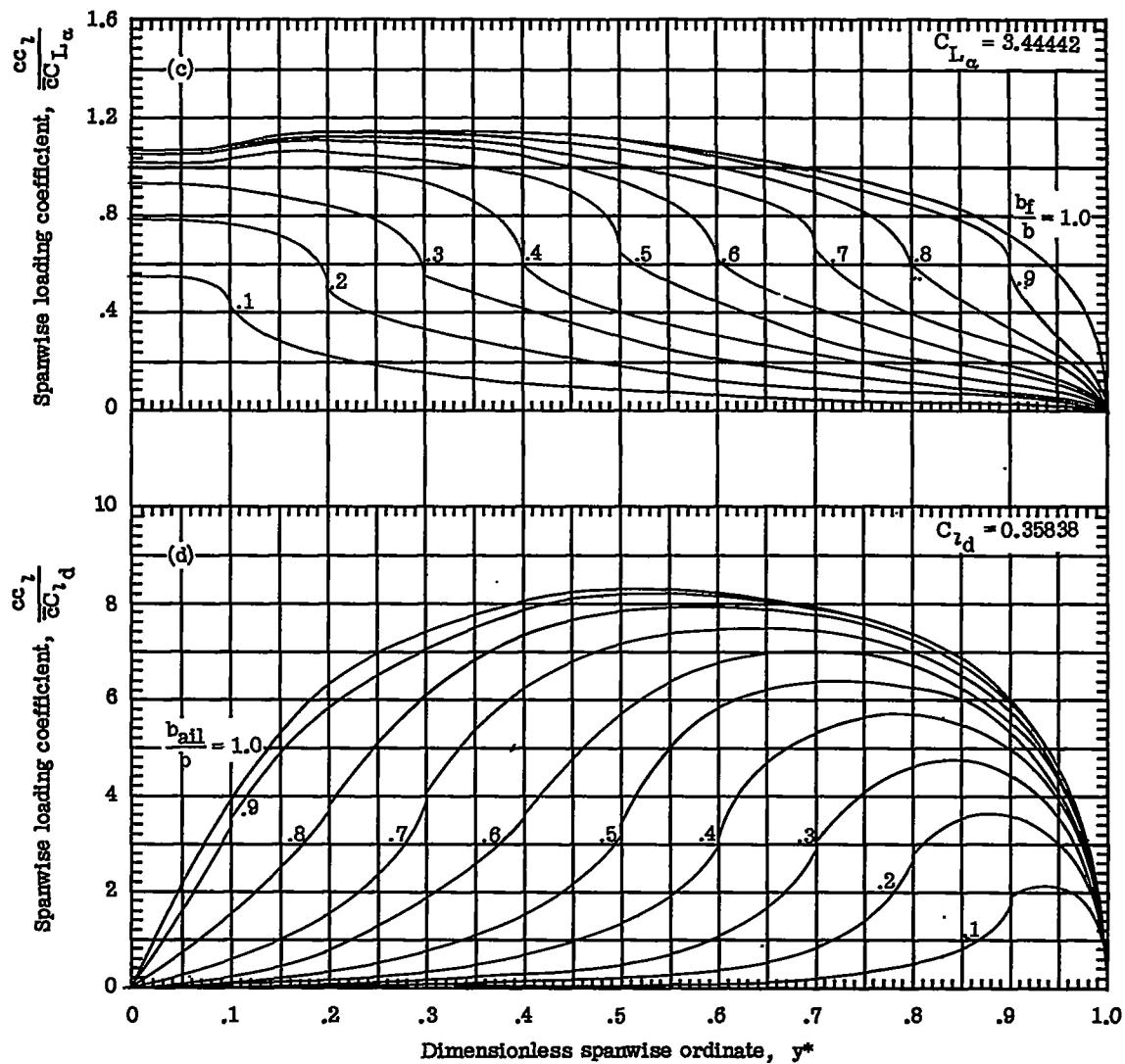
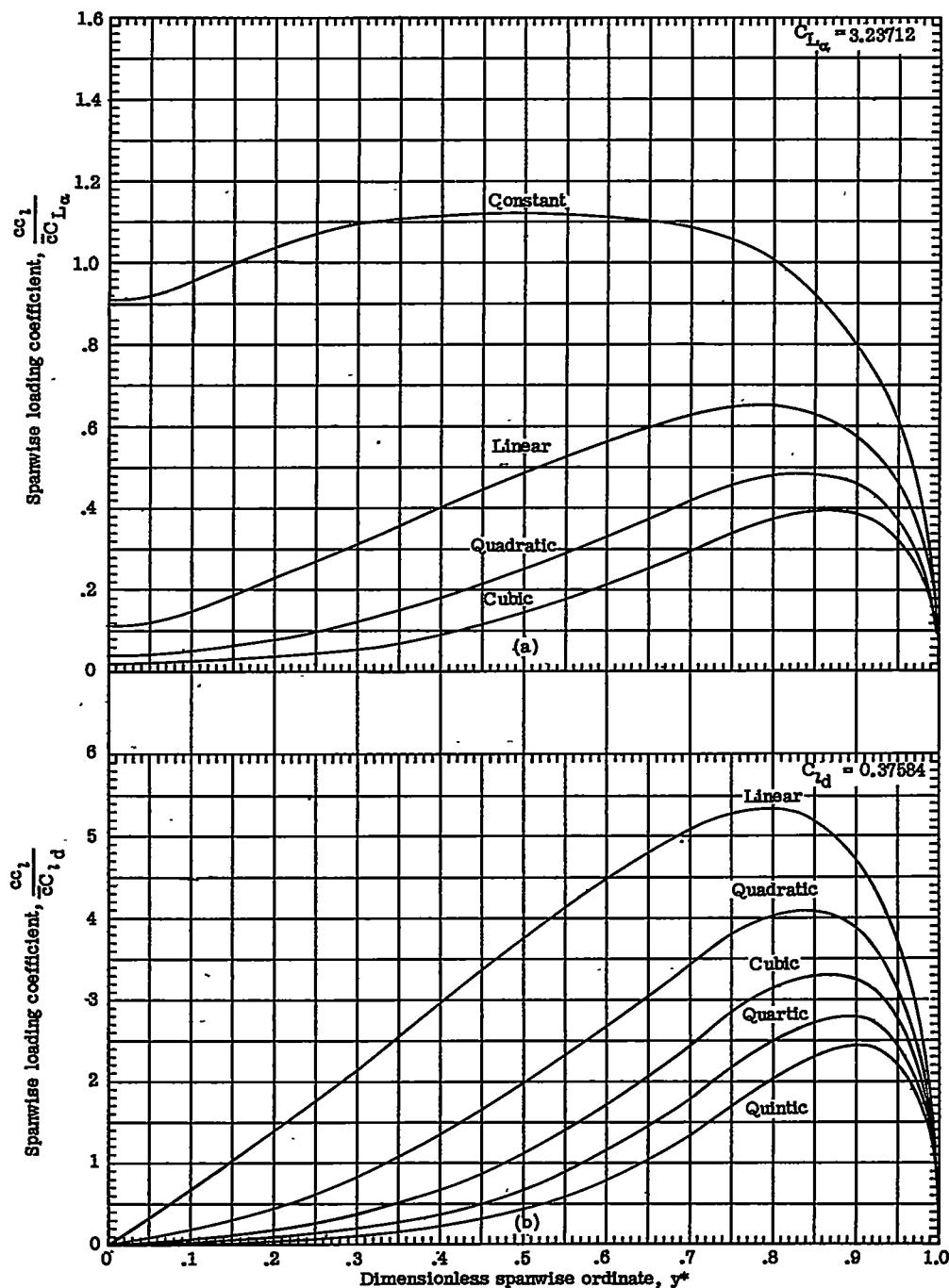


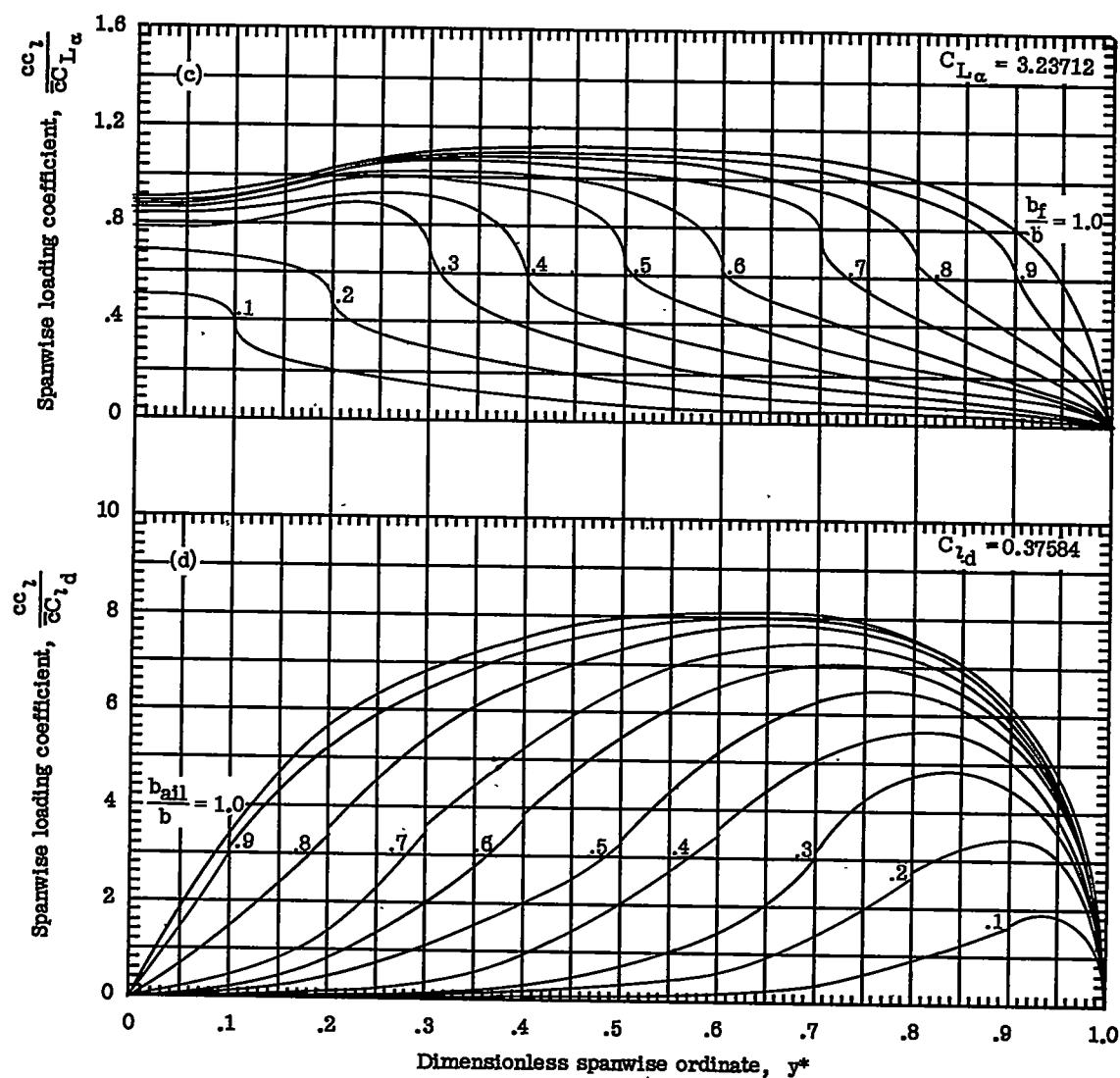
Figure 50.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

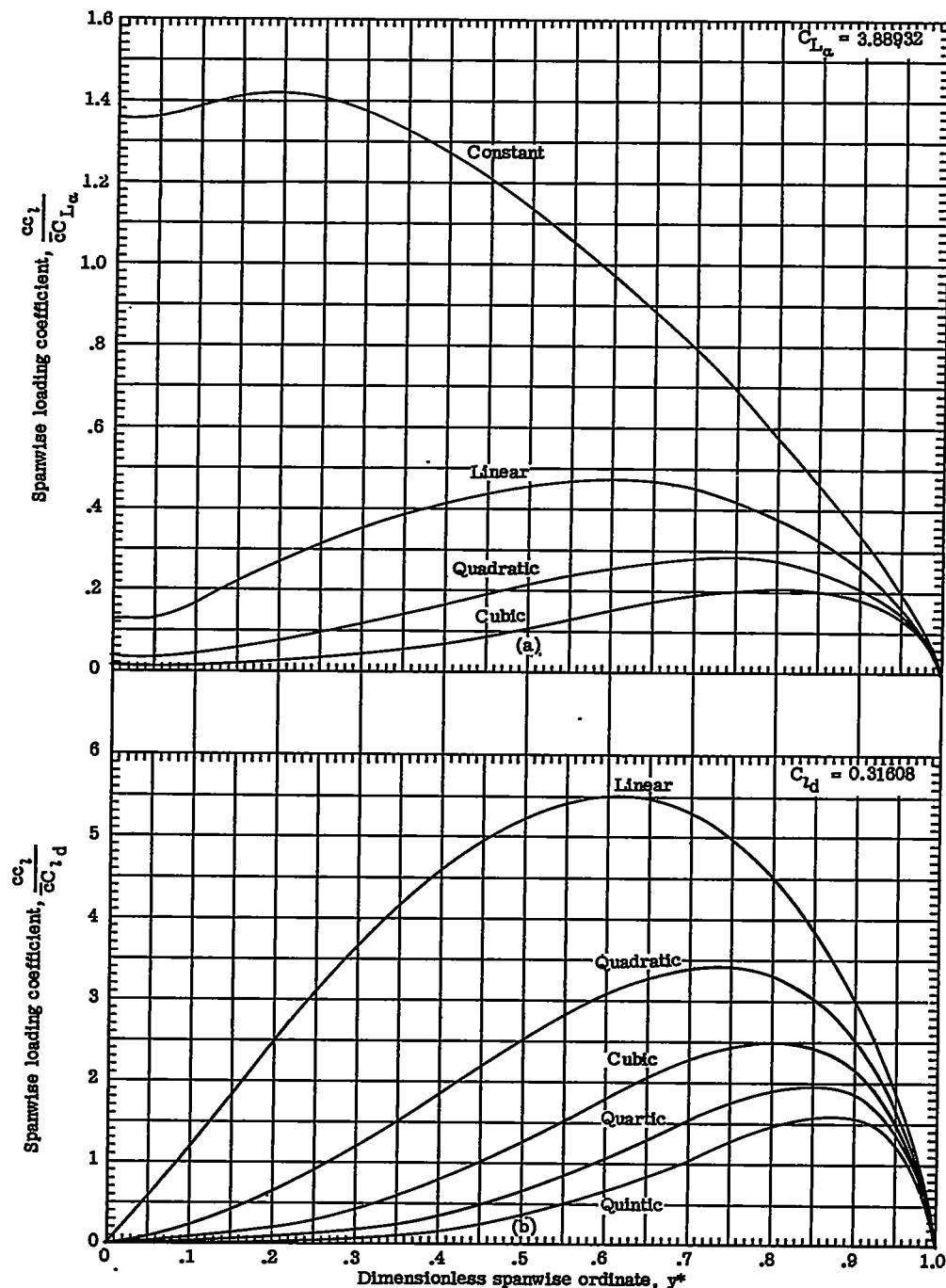
Figure 51.- Spanwise lift distributions for plan form 534 ( $A = 6.0$ ;  $\lambda = 1.00$ ;  $\Lambda = 45^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 51.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 52.- Spanwise lift distributions for plan form 541 ( $A = 12.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 45^\circ$ ).

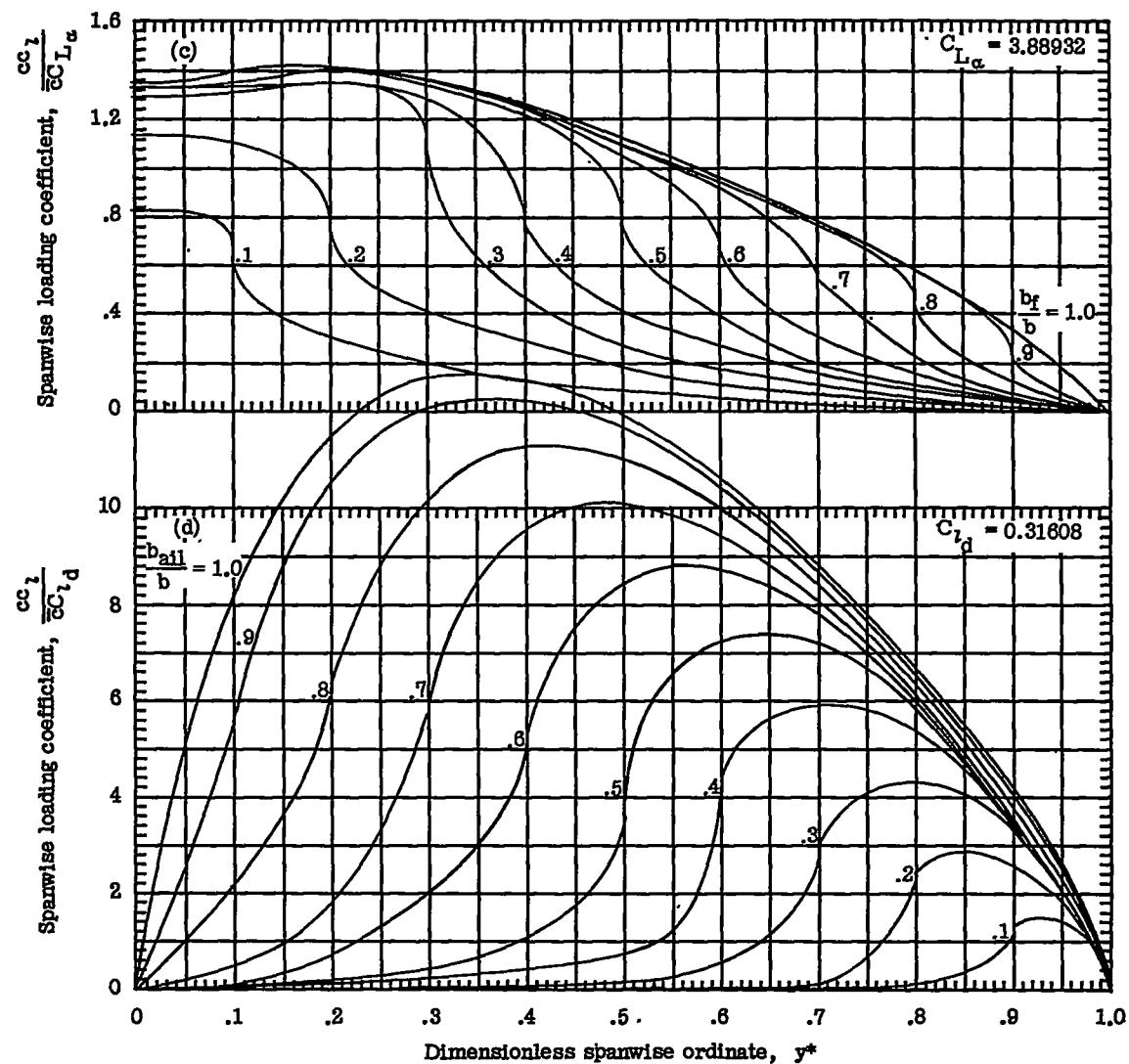
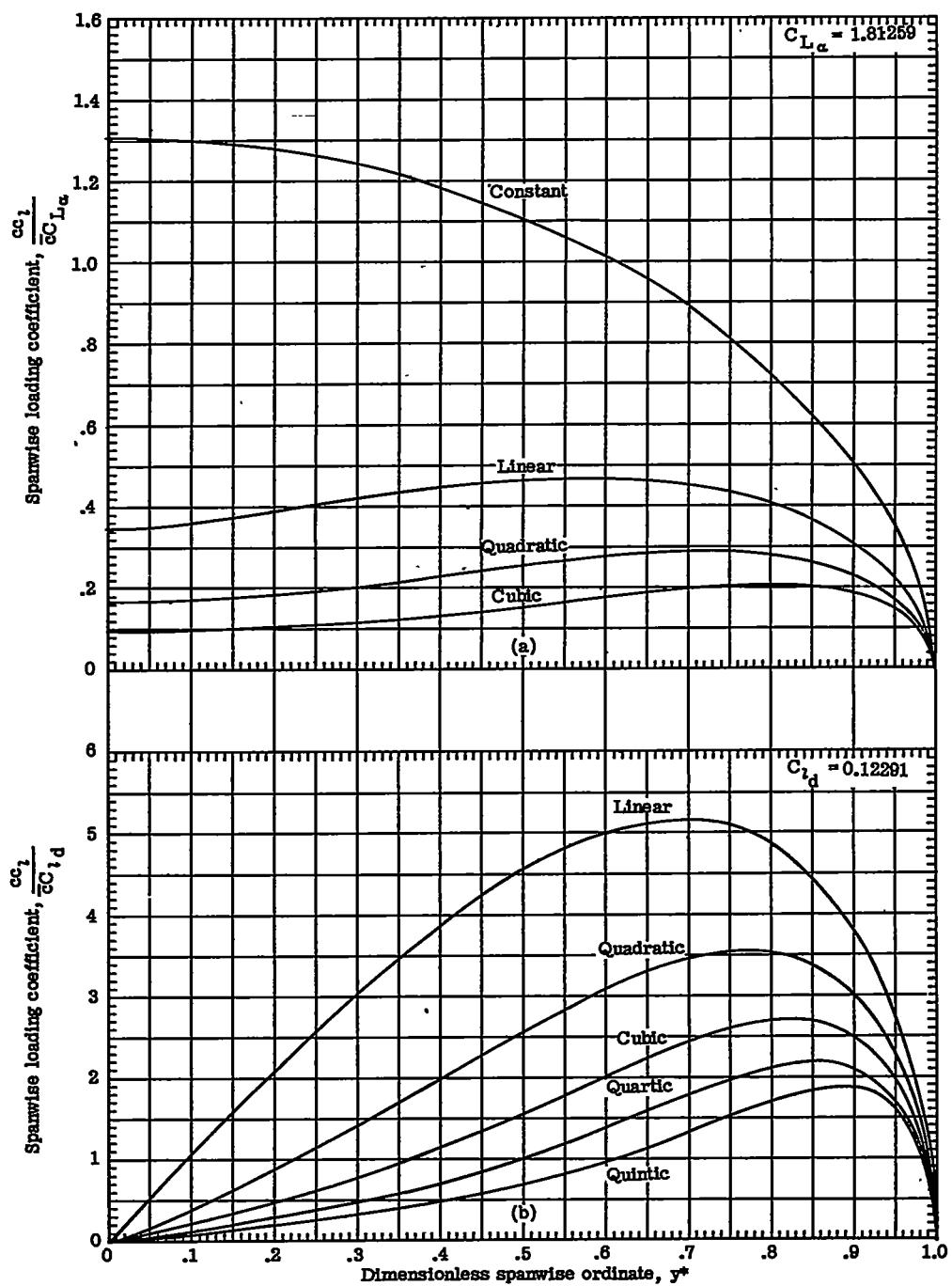


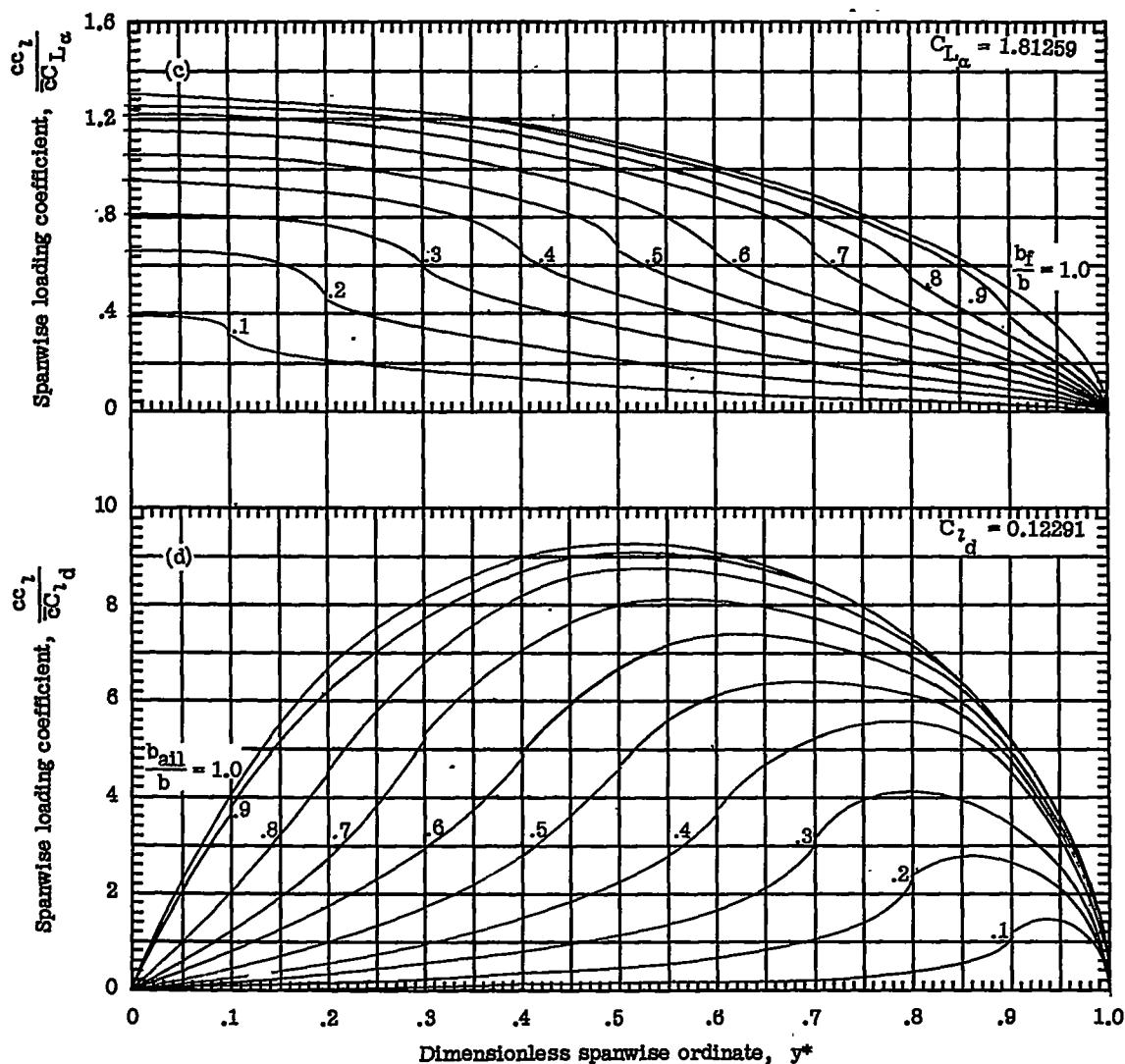
Figure 52.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 53.- Spanwise lift distributions for plan form 611 ( $A = 1.5$ ;  
 $\lambda = 0$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 53.-- Concluded.

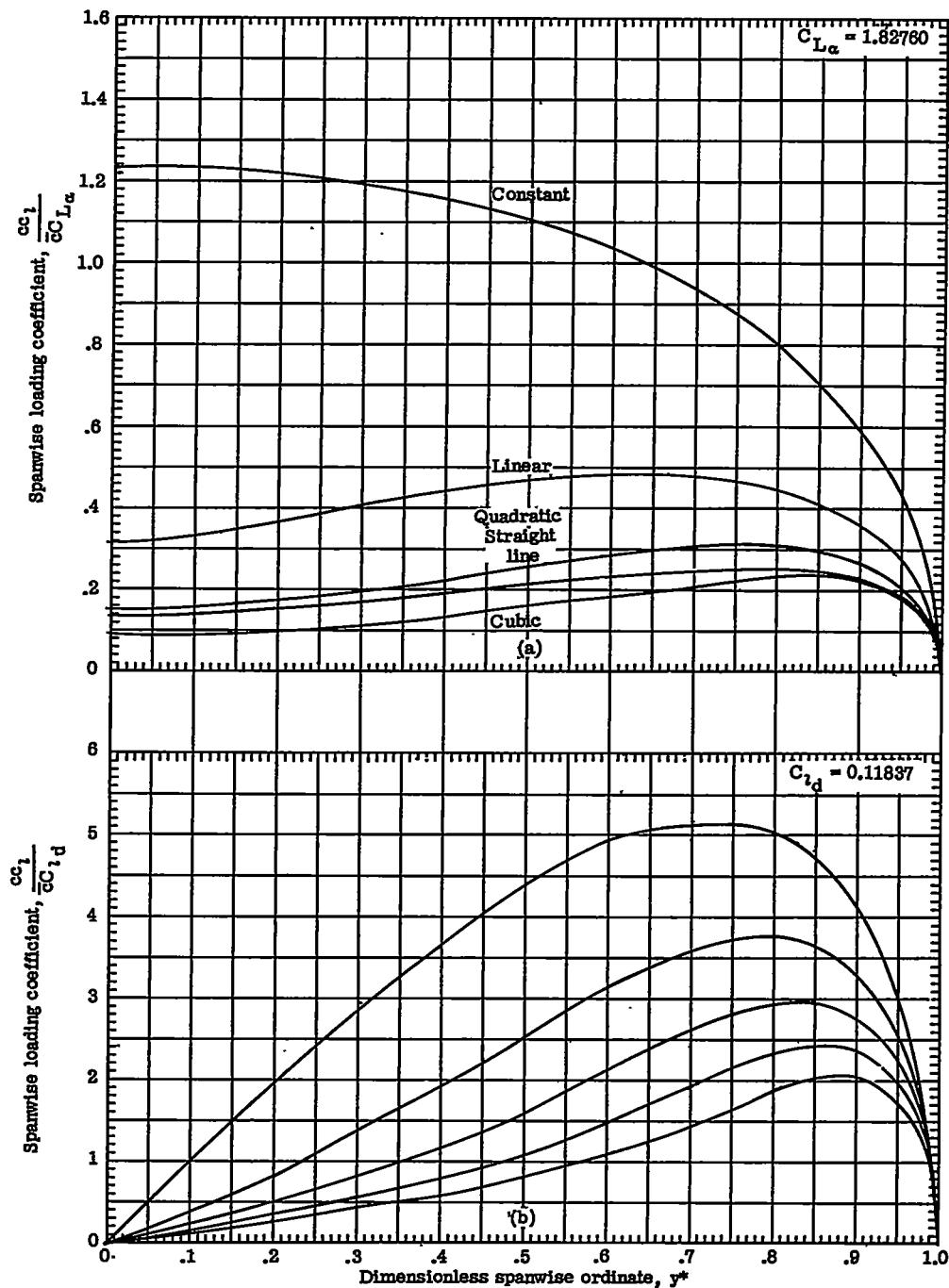


Figure 54.- Spanwise lift distributions for plan form 612 ( $A = 1.5$ ;  $\lambda = 0.25$ ;  $\Lambda = 60^\circ$ ).

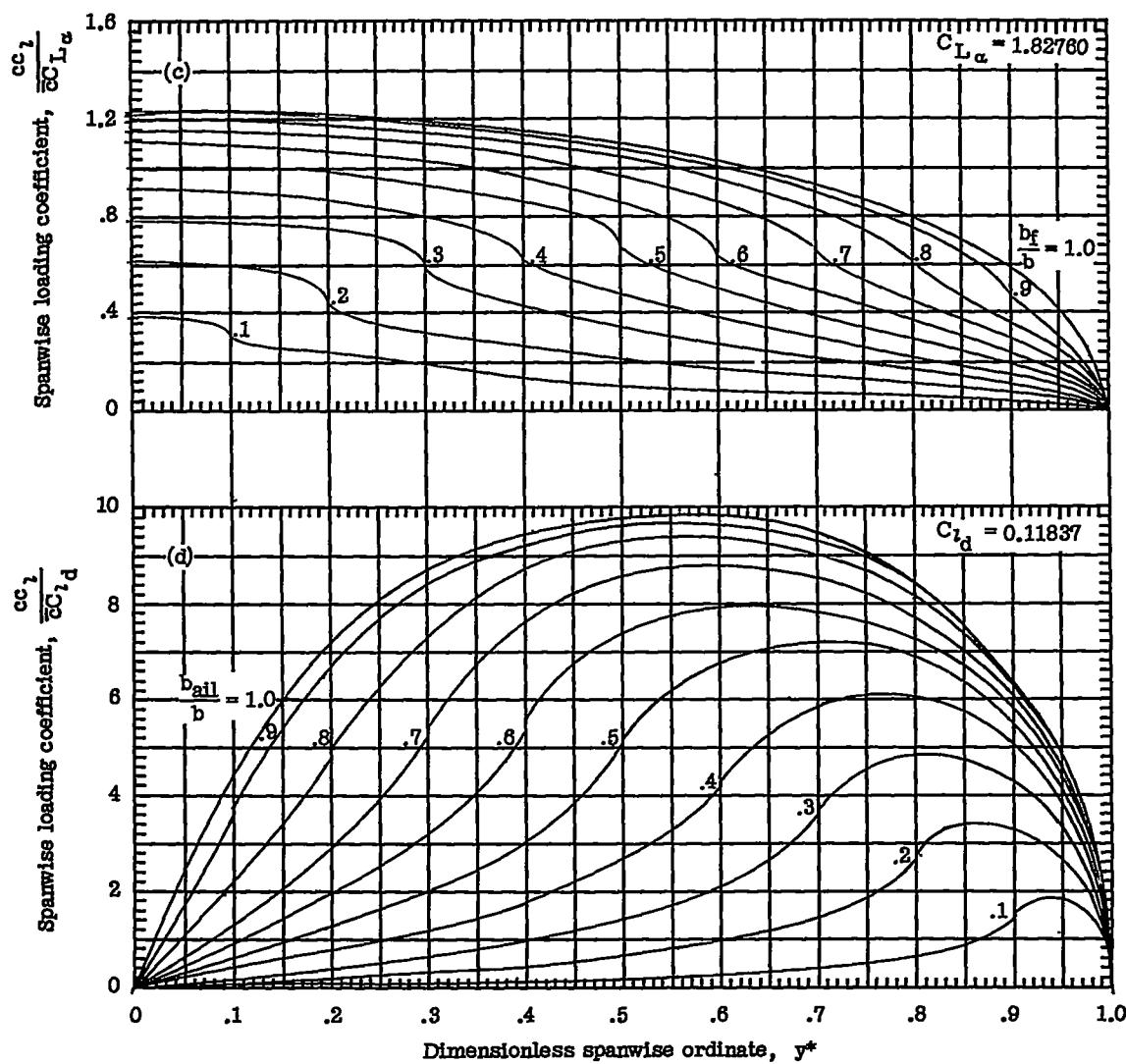
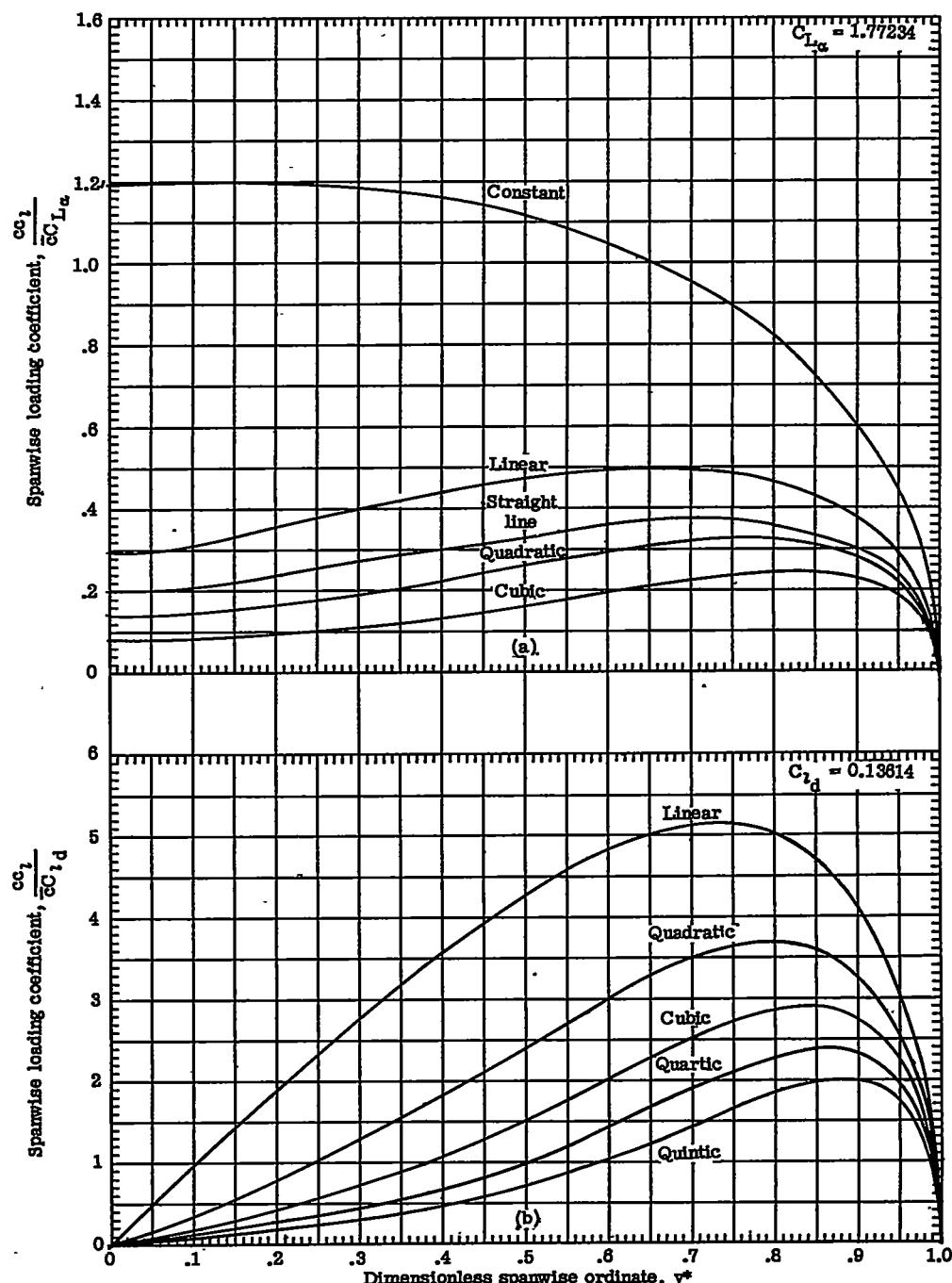


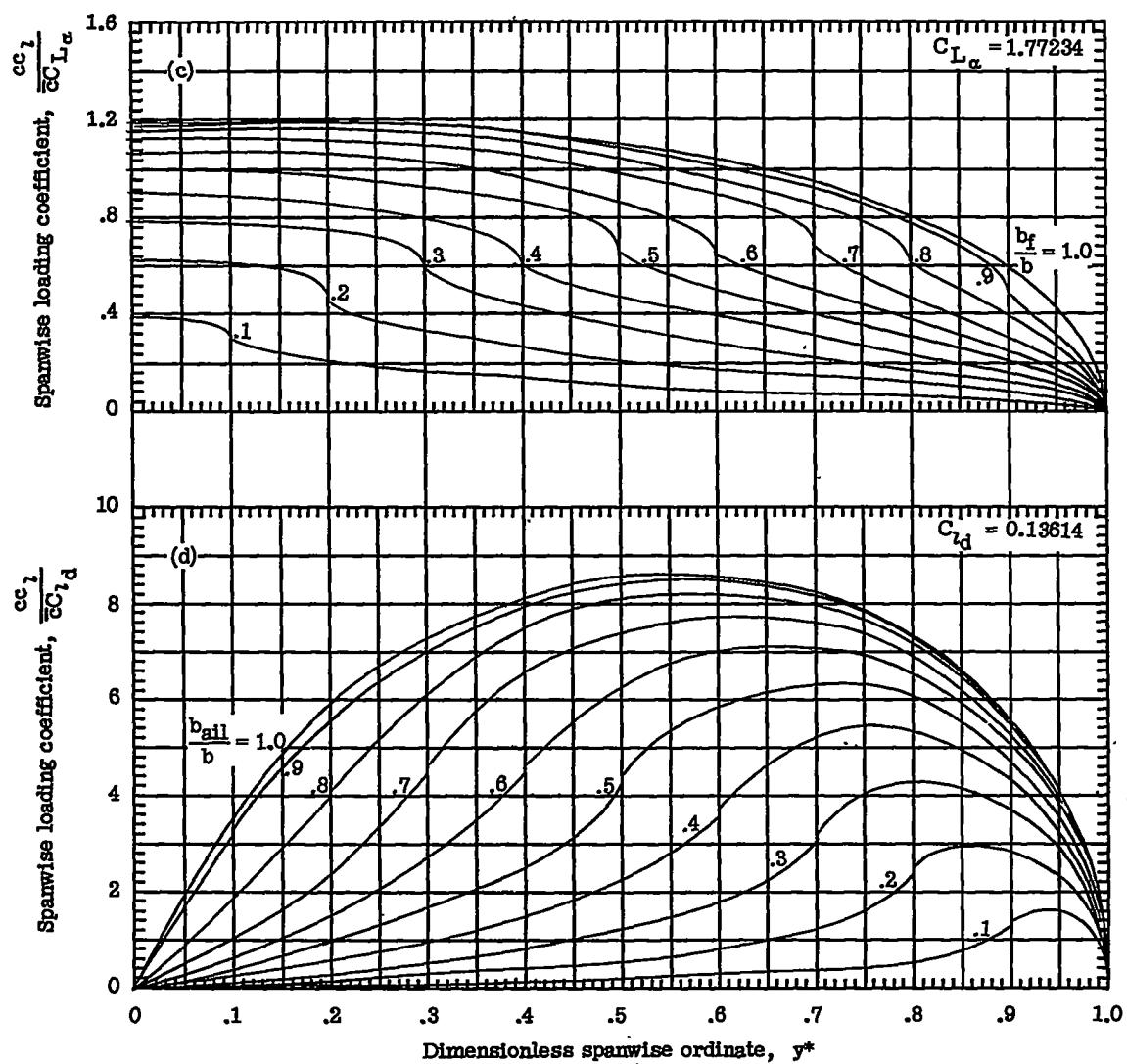
Figure 54.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

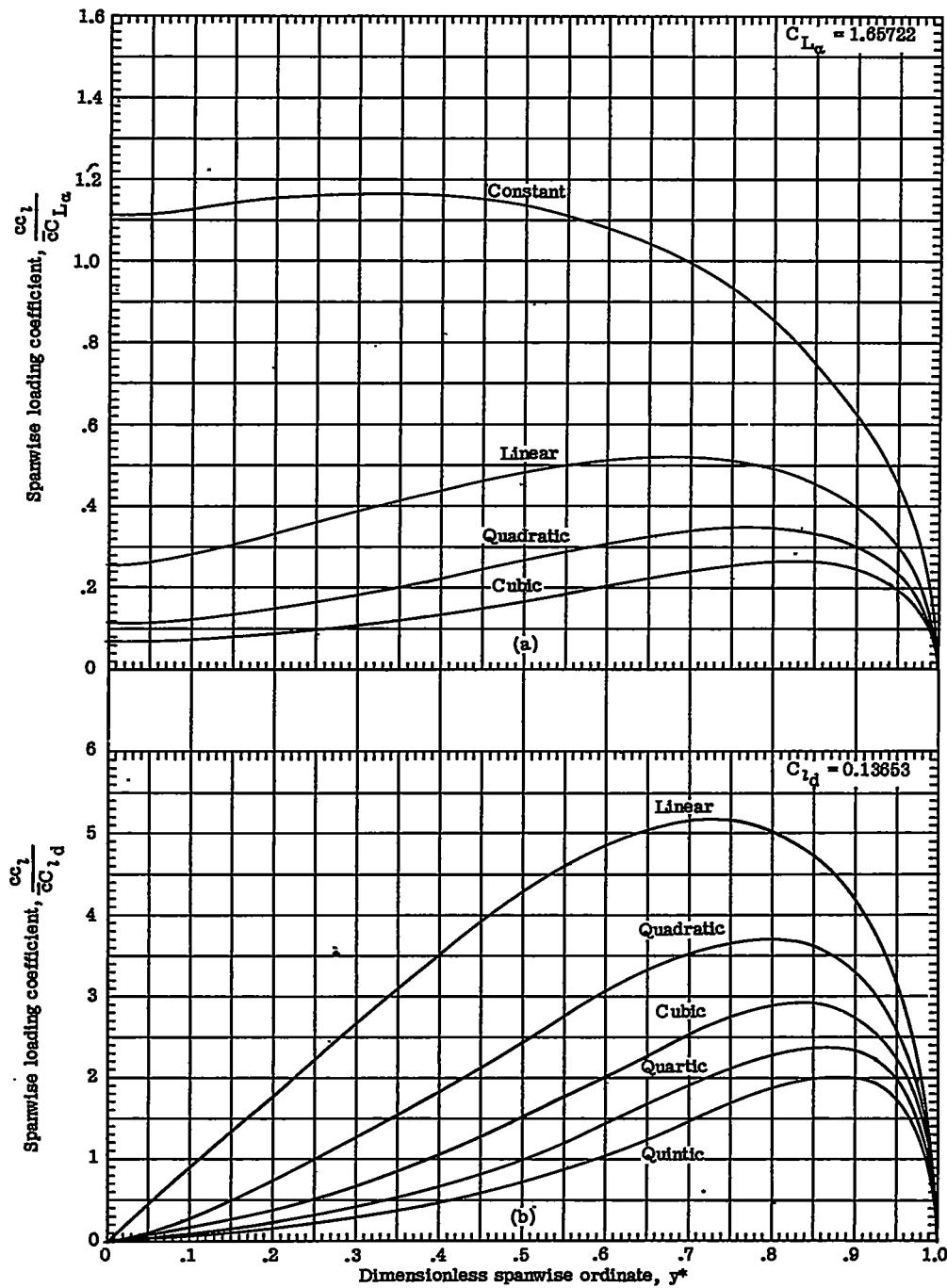
Figure 55.- Spanwise lift distributions for plan form 613 ( $A = 1.5$ ;  $\lambda = 0.50$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

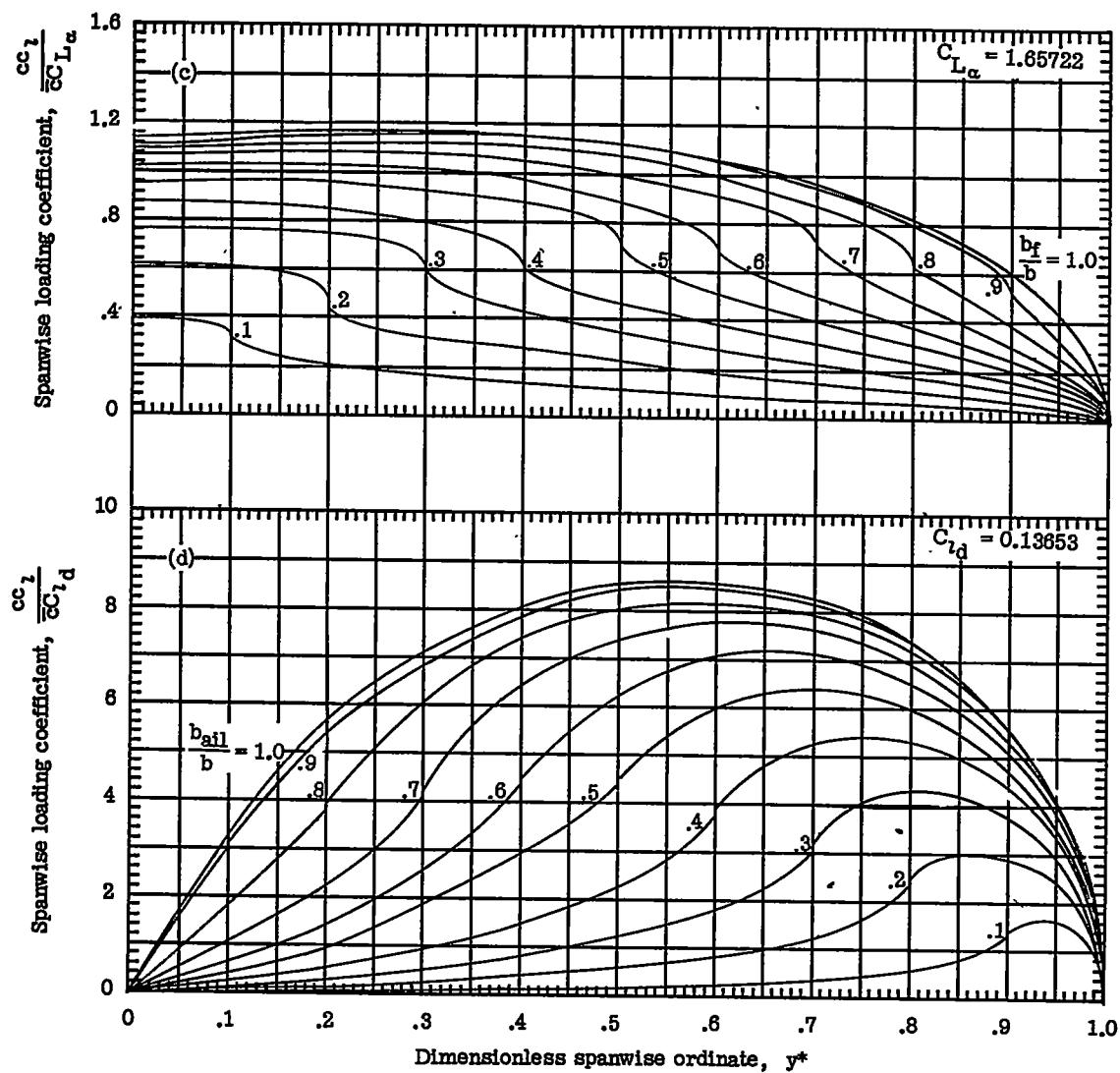
Figure 55.-- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

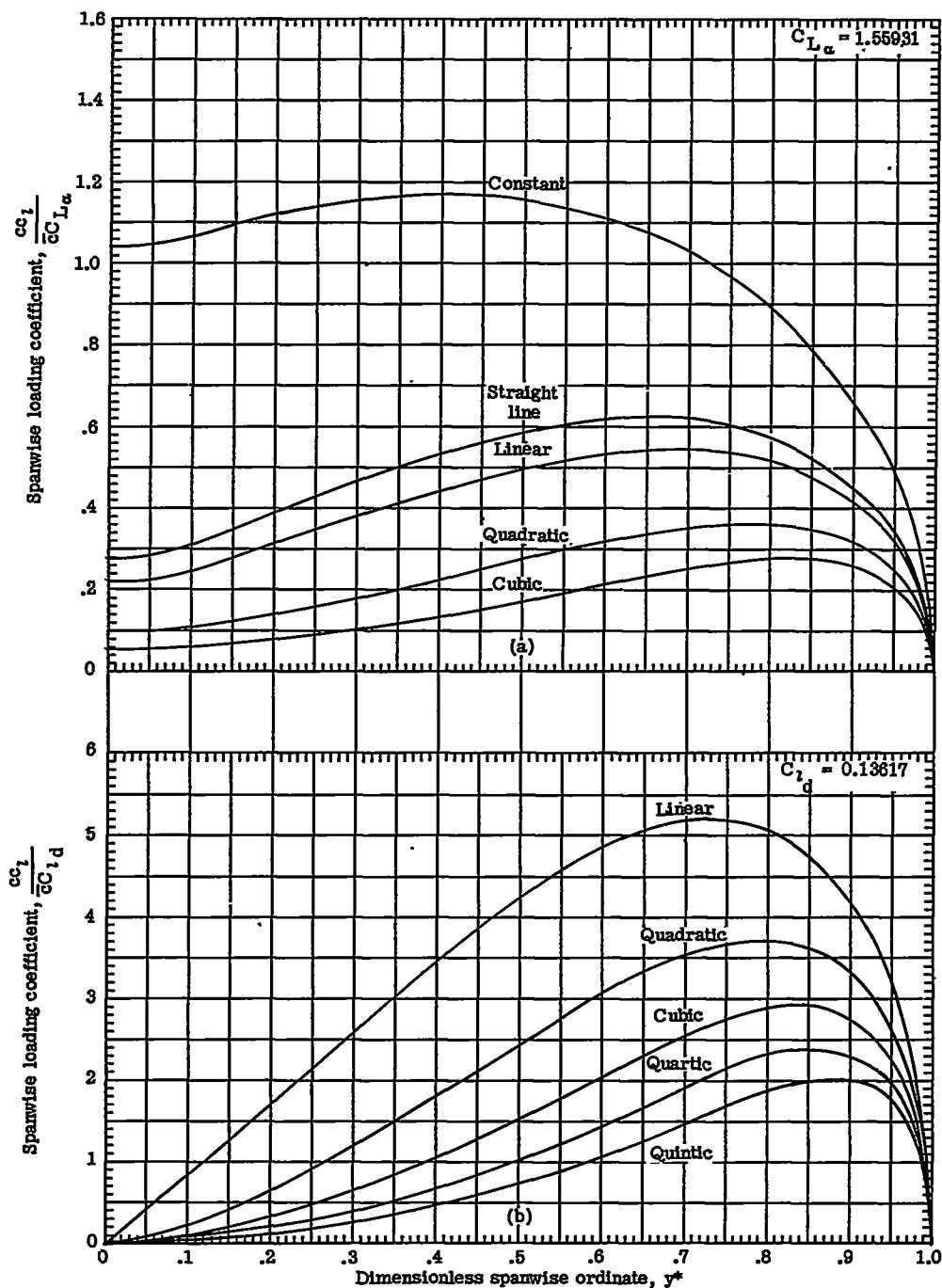
Figure 56.- Spanwise lift distributions for plan form 614 ( $A = 1.5$ ;  
 $\lambda = 1.00$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 56.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 57.- Spanwise lift distributions for plan form 615 ( $A = 1.5$ ;  
 $\lambda = 1.50$ ;  $\Lambda = 60^\circ$ ).

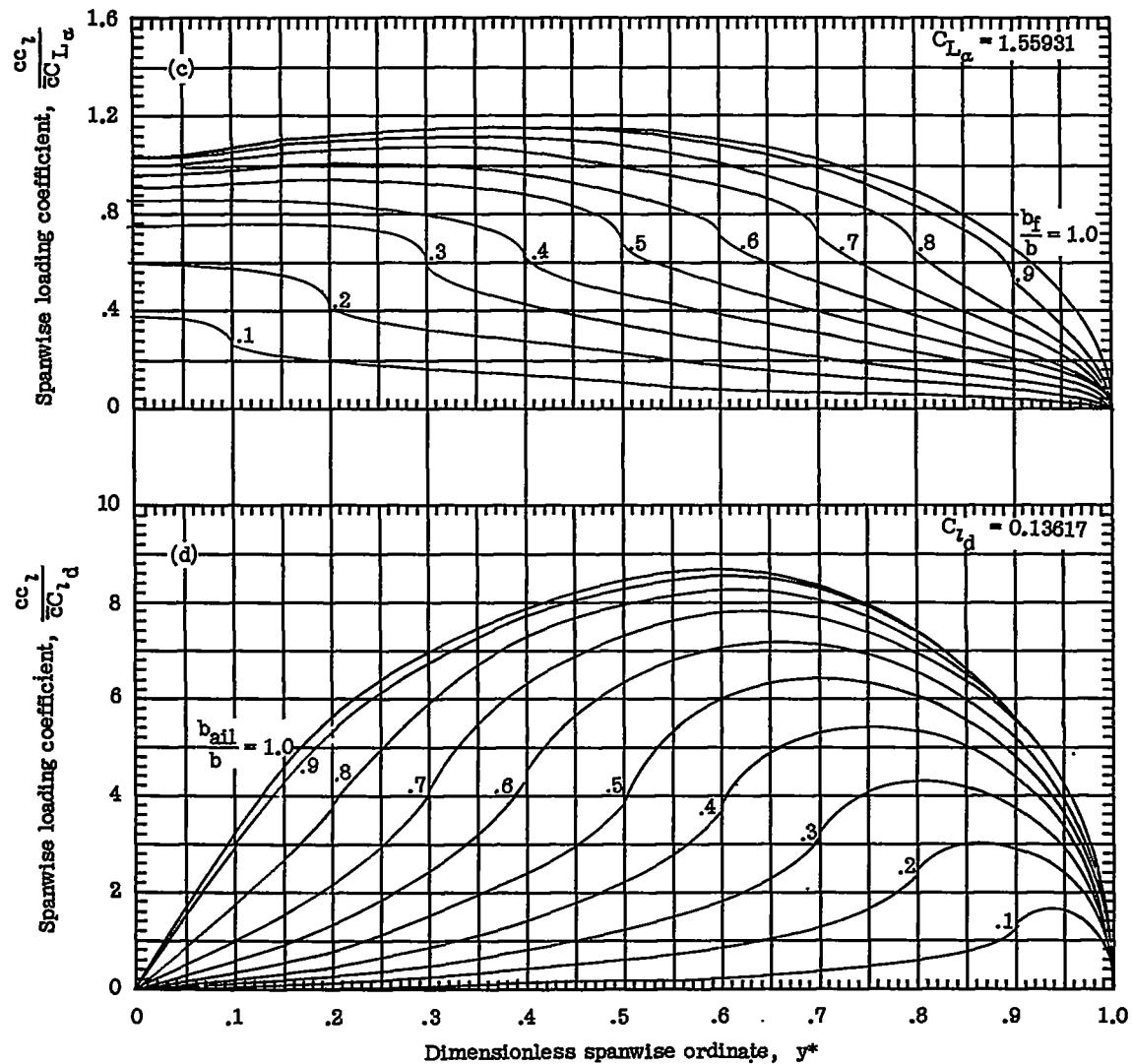
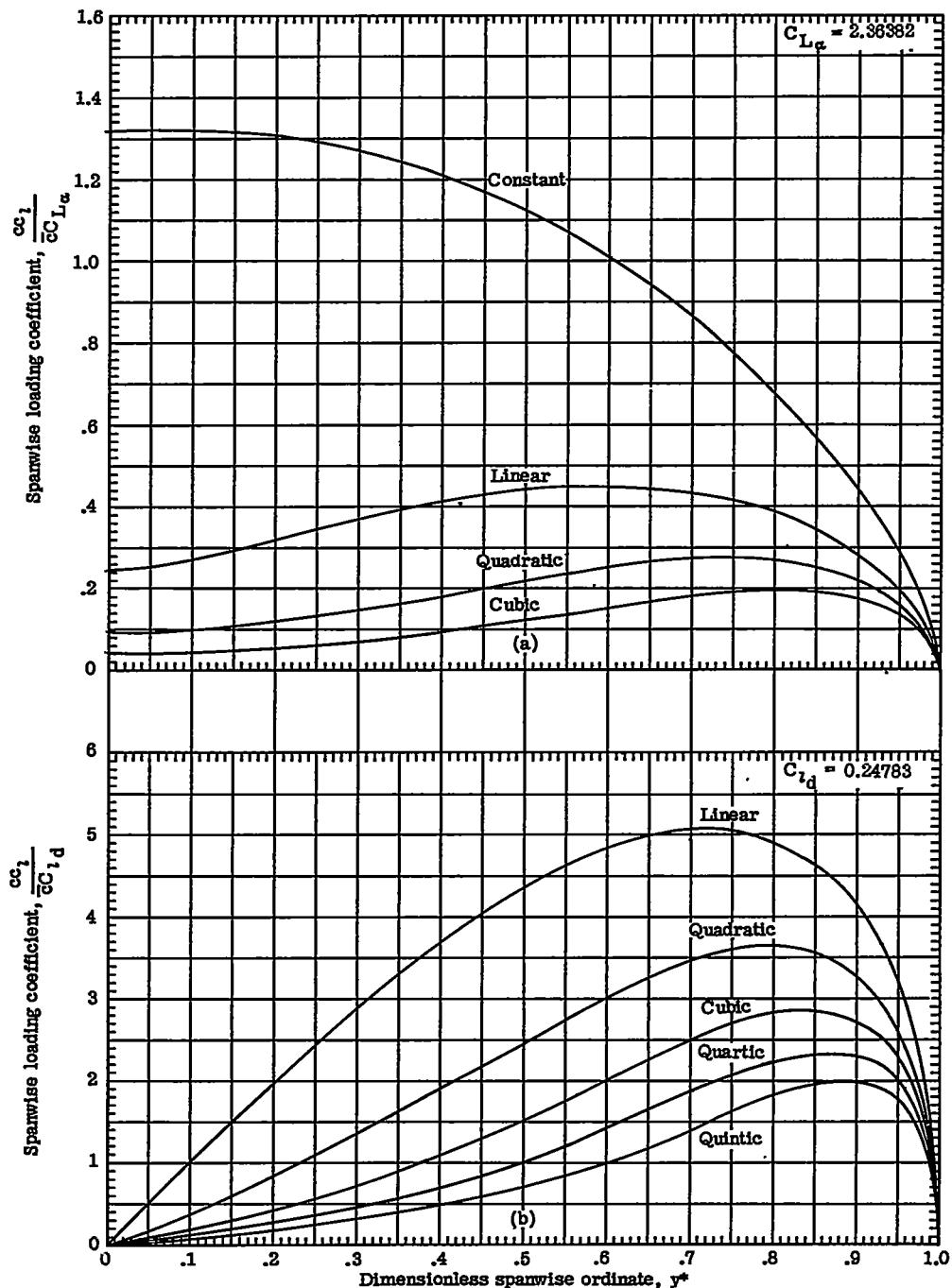


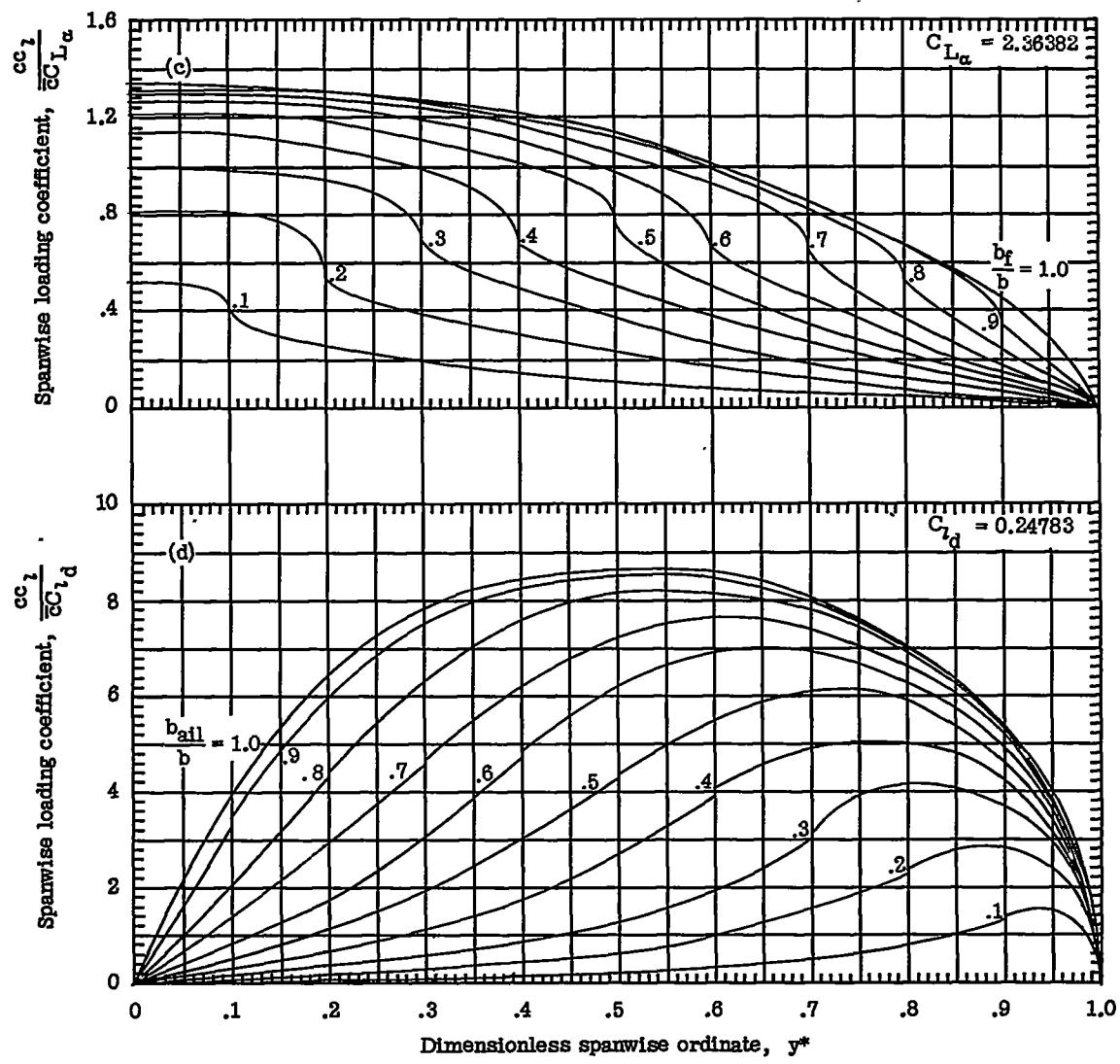
Figure 57.- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 58.- Spanwise lift distributions for plan form 621 ( $A = 3.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 58.- Concluded.

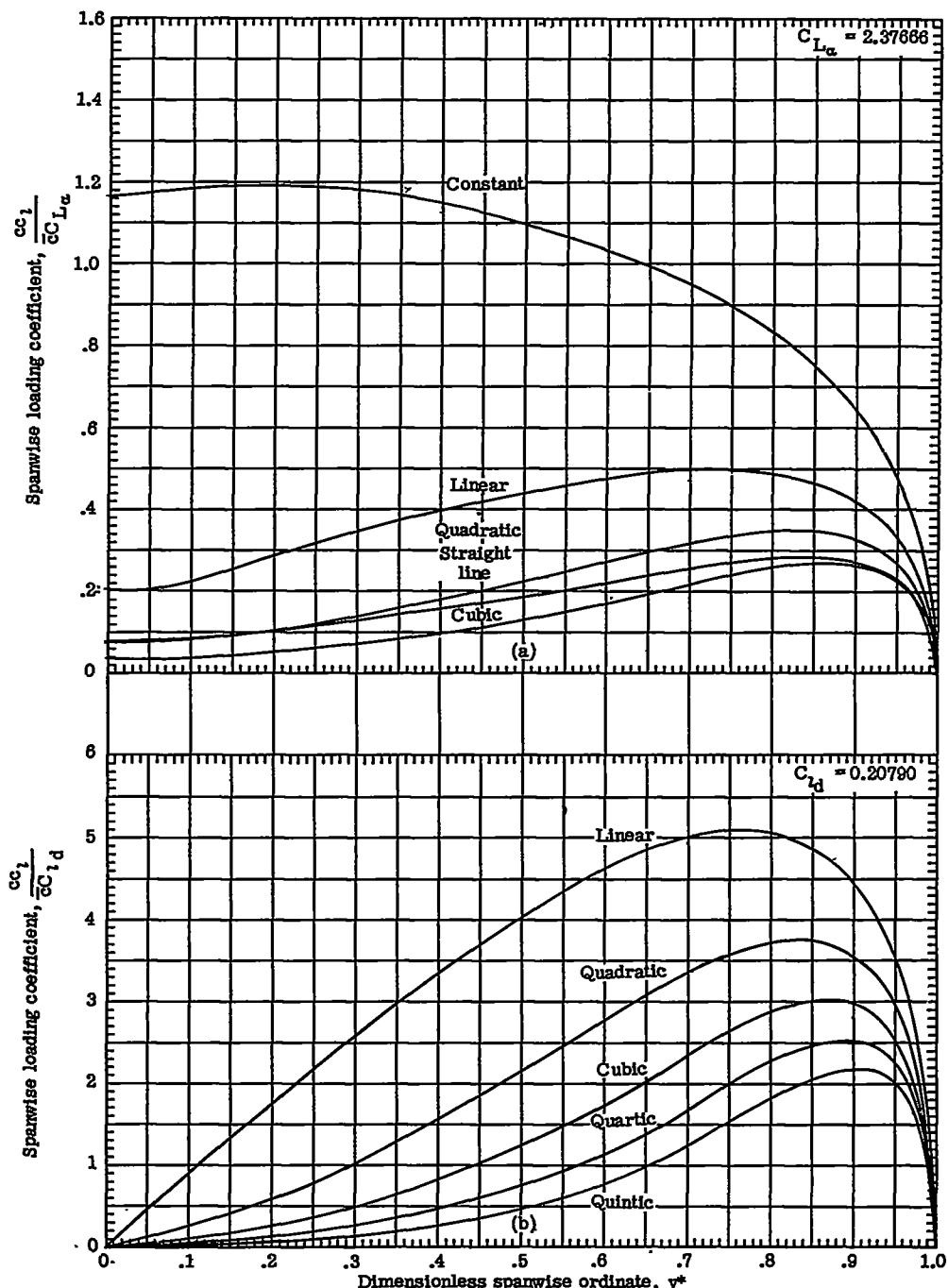
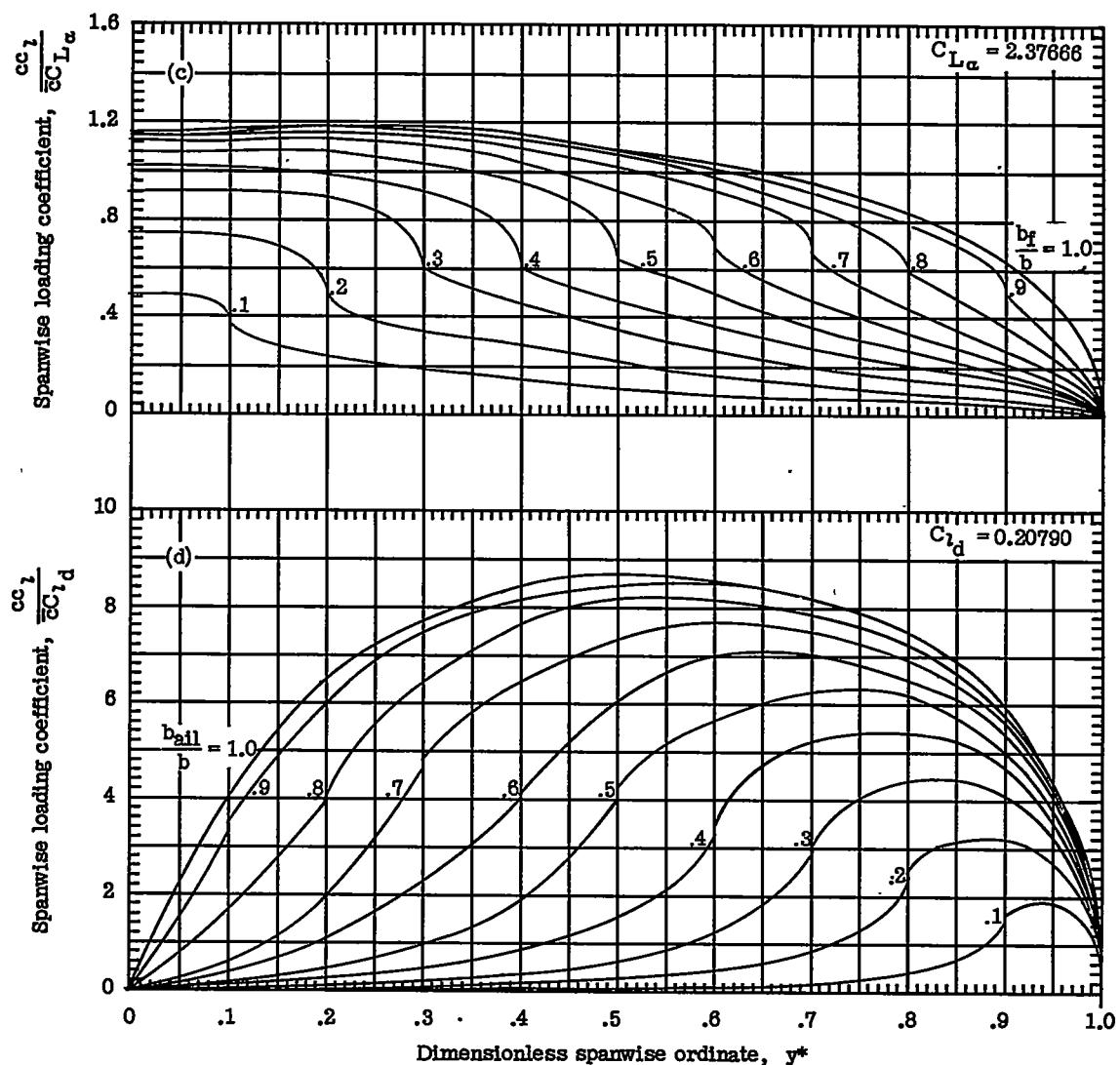


Figure 59.- Spanwise lift distributions for plan form 622 ( $A = 3.0$ ;  $\lambda = 0.25$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 59.- Concluded.

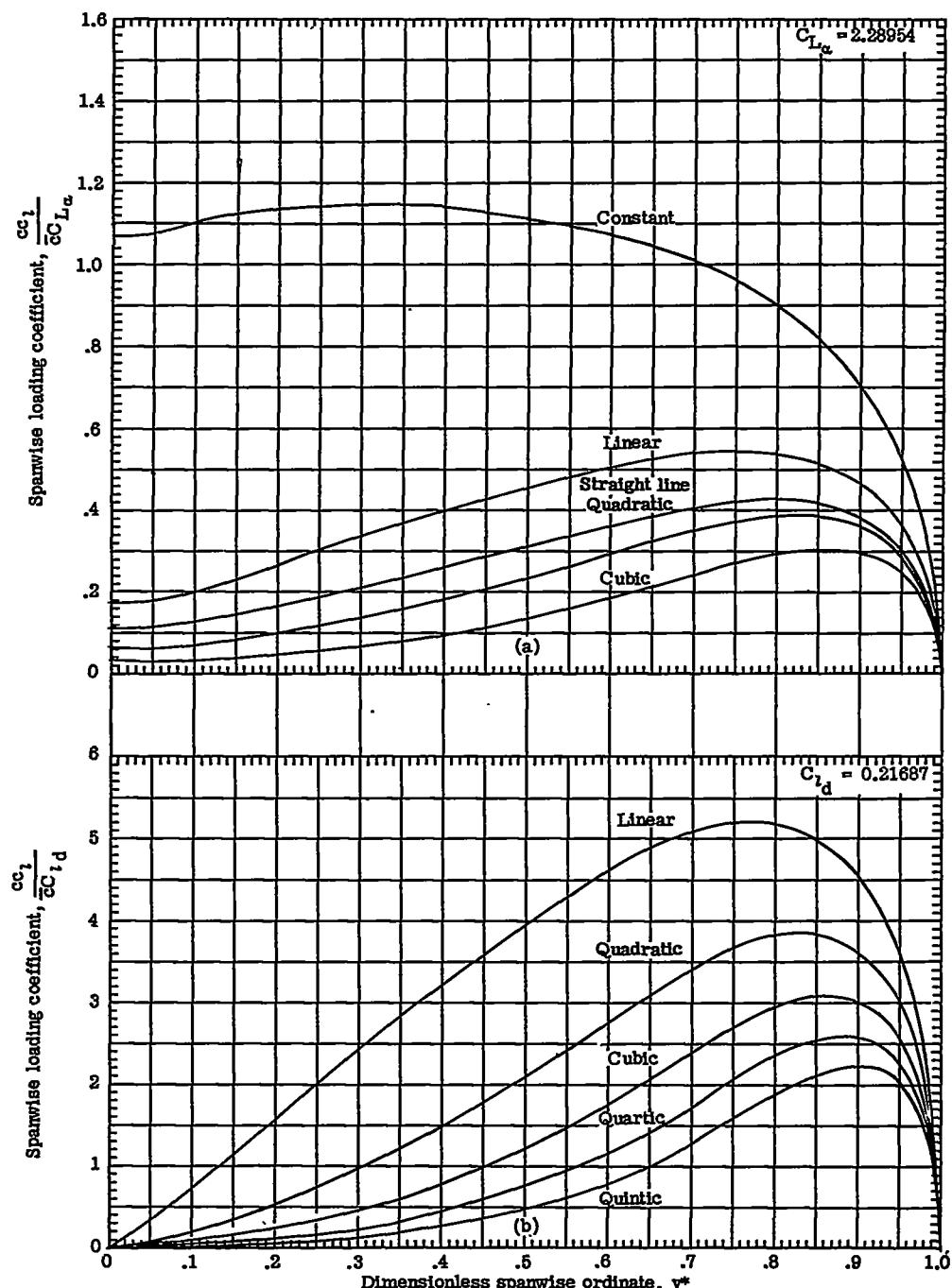
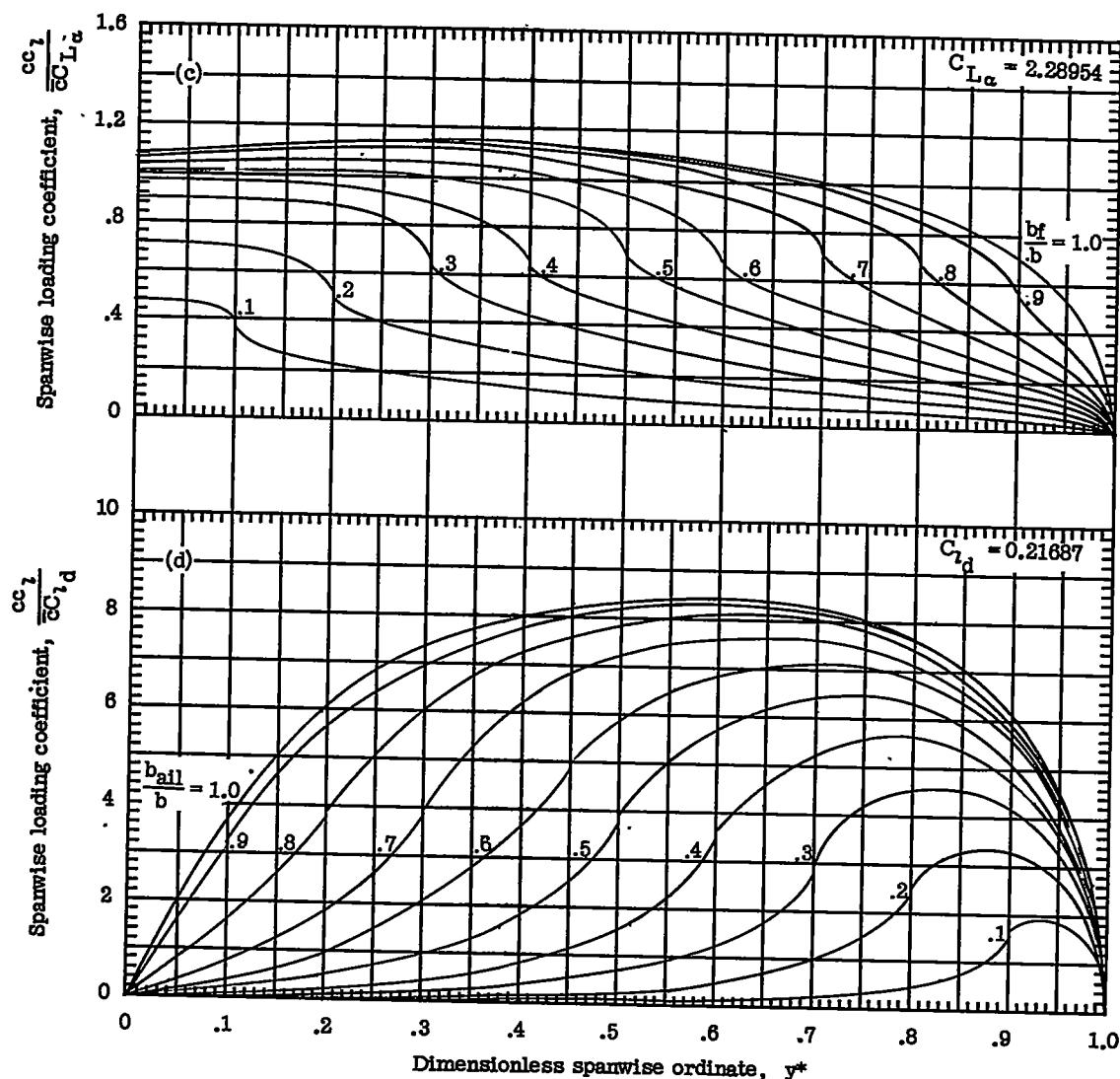


Figure 60.- Spanwise lift distributions for plan form 623 ( $A = 3.0$ ;  $\lambda = 0.50$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distribution for inboard flap.

(d) Lift distribution for outboard aileron.

Figure 60.- Concluded.

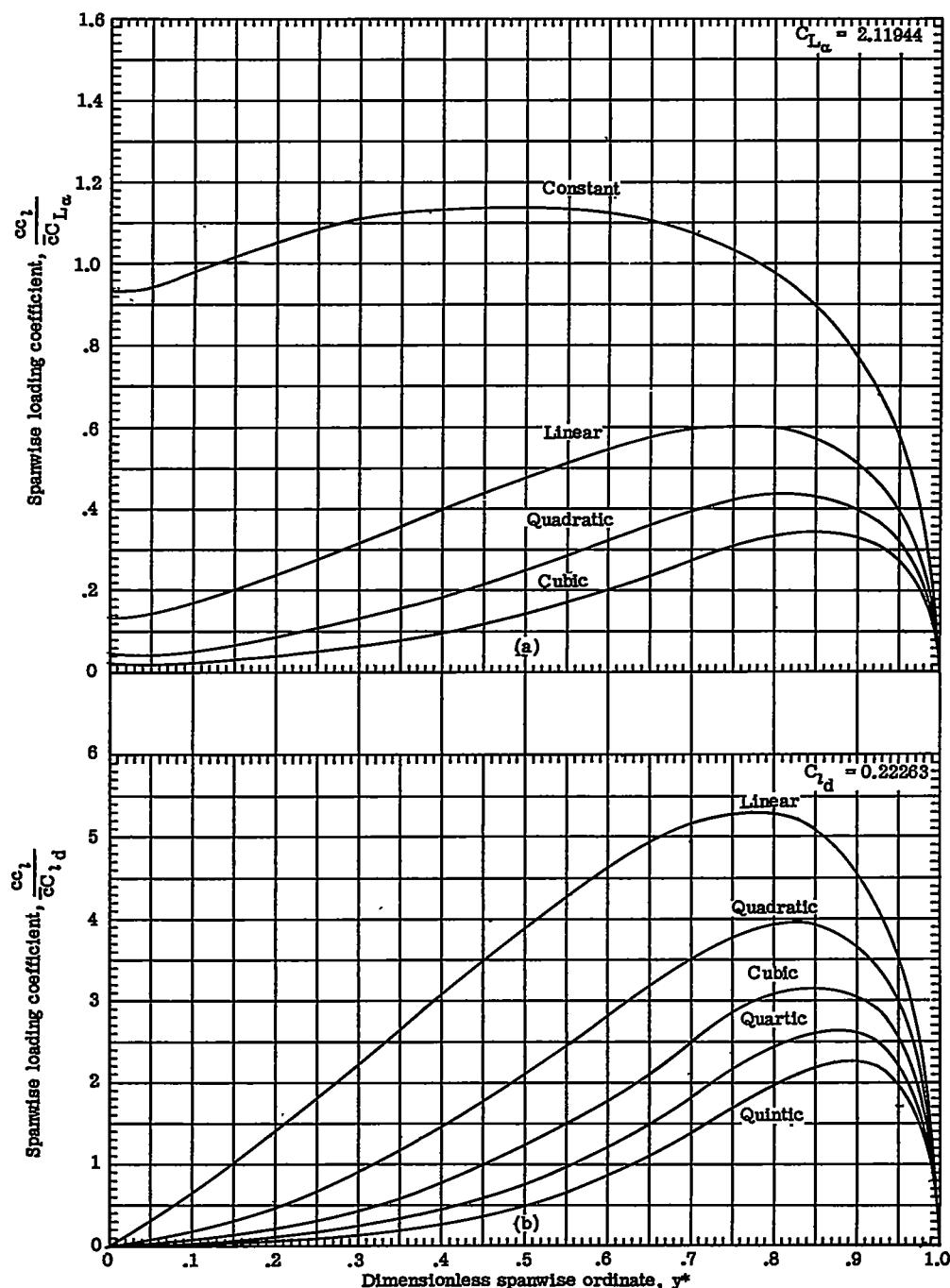


Figure 61.- Spanwise lift distributions for plan form 624 ( $A = 3.0$ ;  
 $\lambda = 1.00$ ;  $\Lambda = 60^\circ$ ).

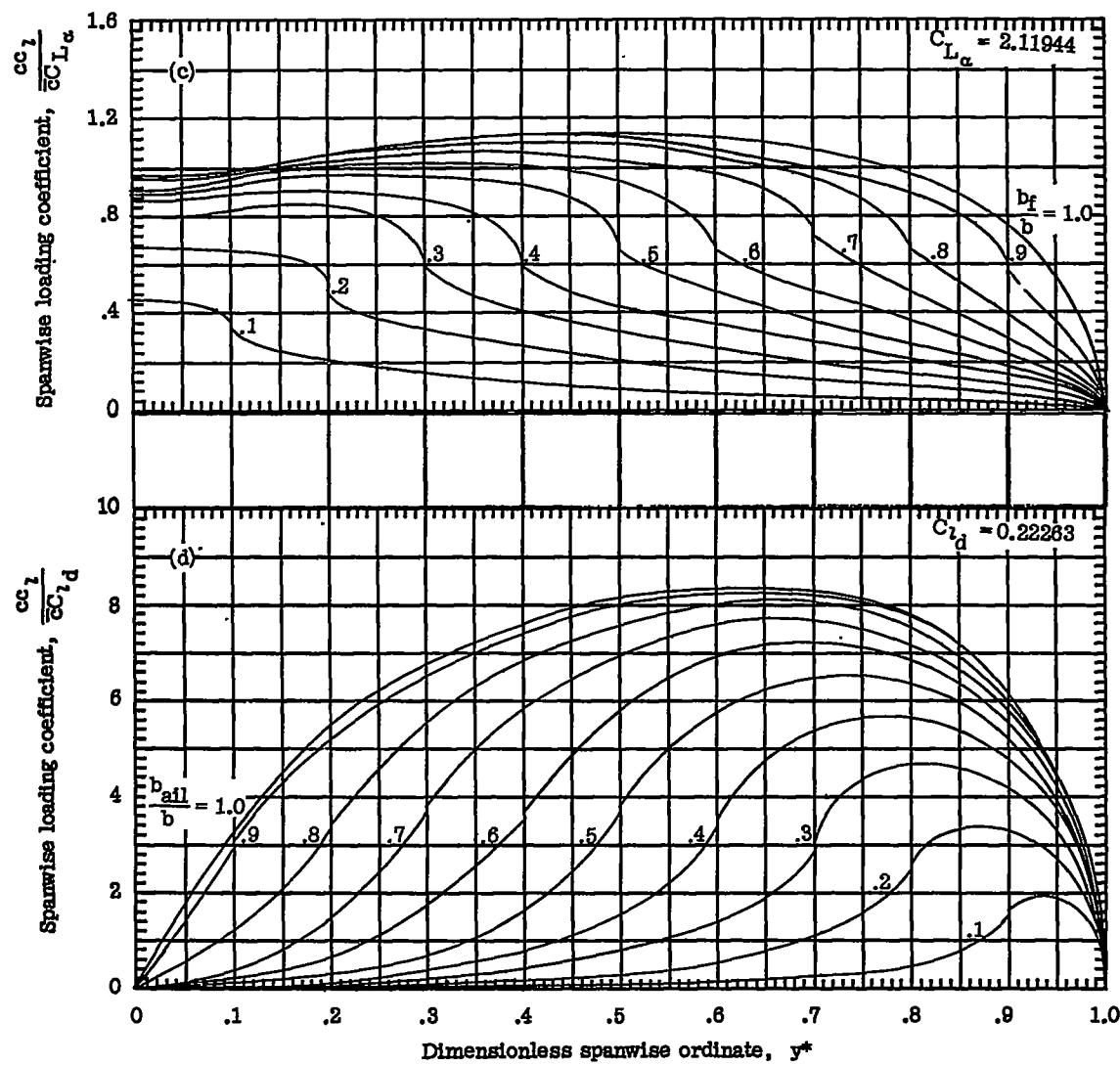
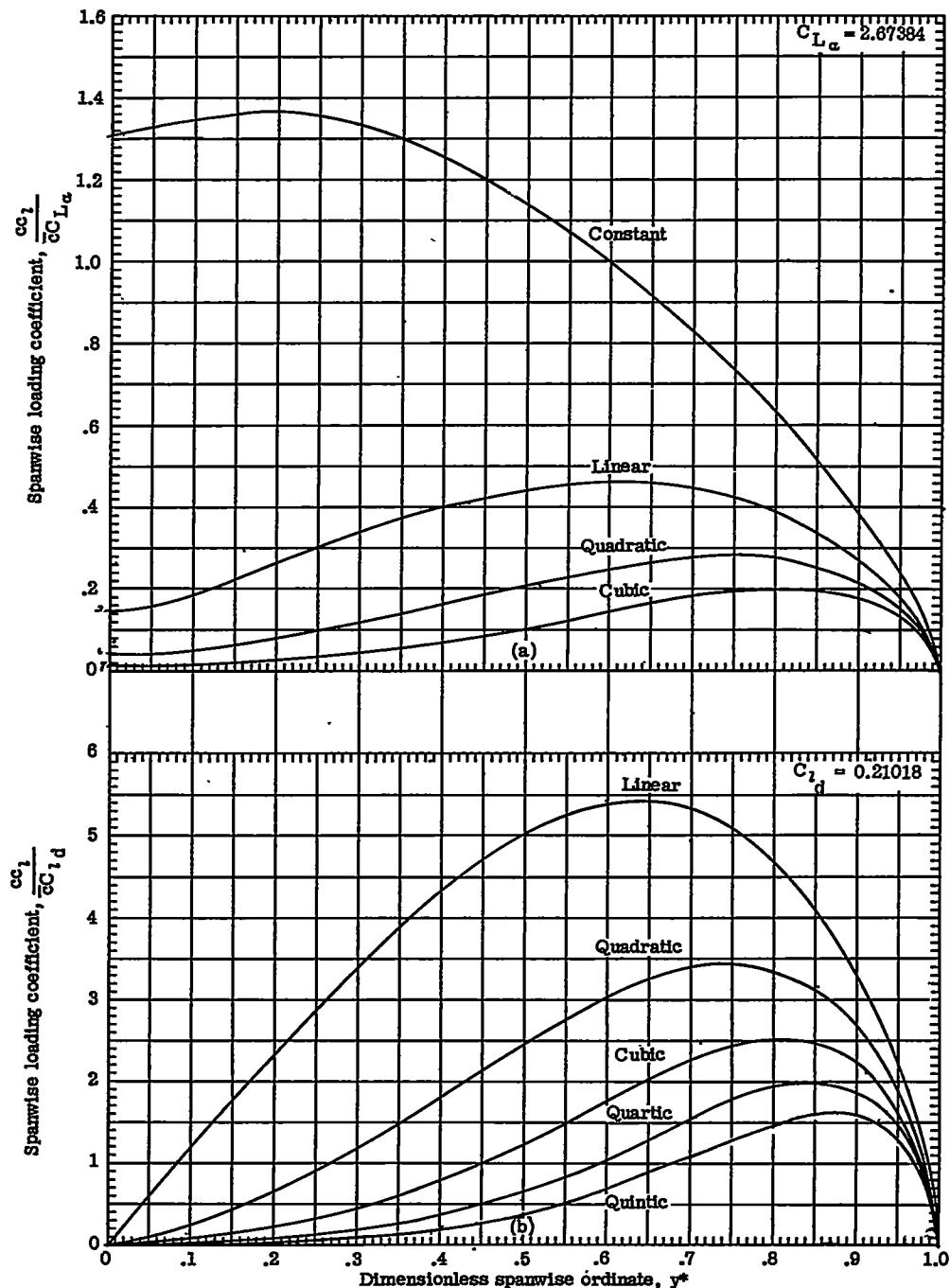


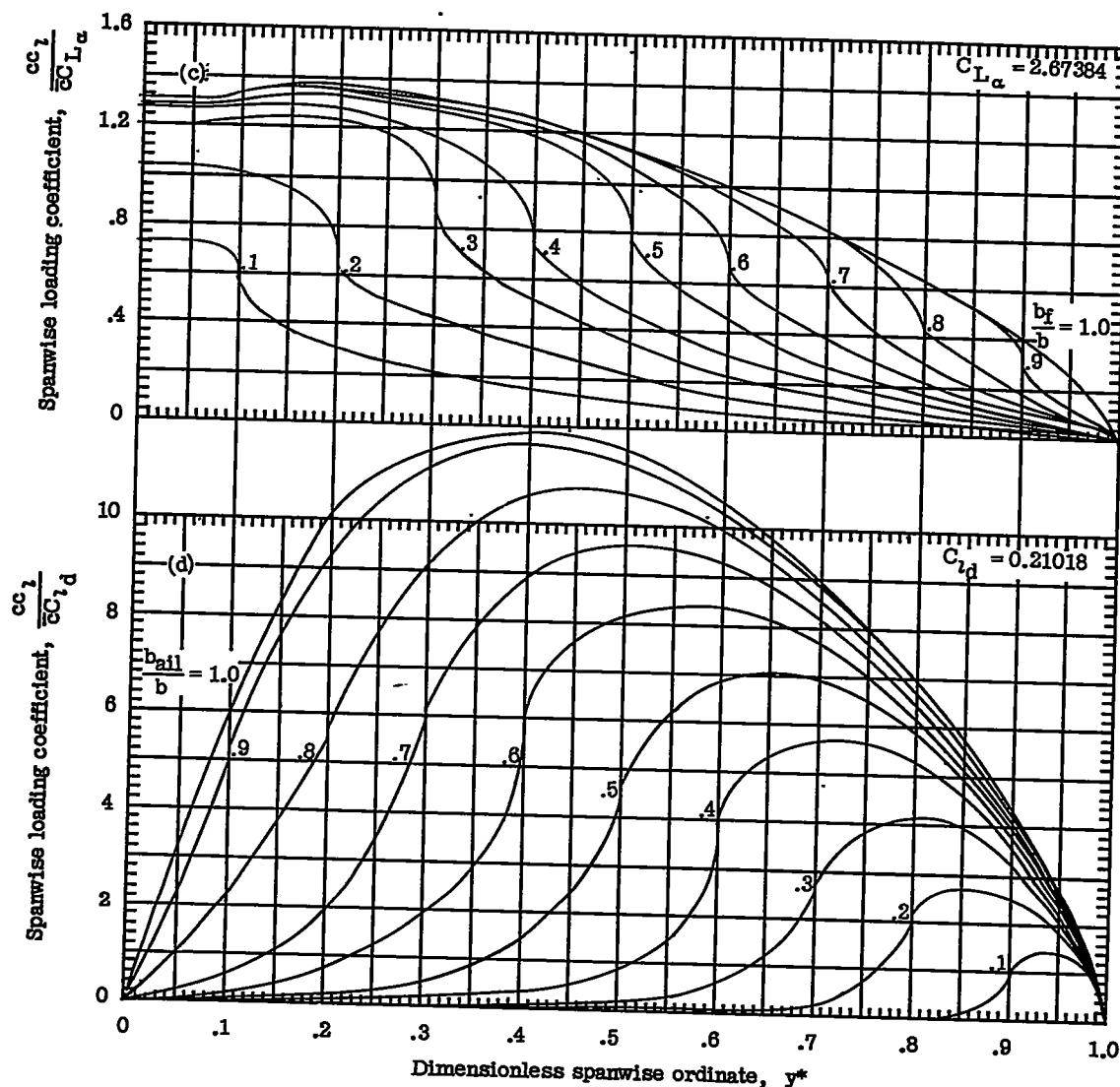
Figure 61.-- Concluded.



(a) Symmetric lift distributions.

(b) Antisymmetric lift distributions.

Figure 62.- Spanwise lift distributions for plan form 631 ( $A = 6.0$ ;  
 $\lambda = 0$ ;  $\Lambda = 60^\circ$ ).



(c) Lift distributions for inboard flap.

(d) Lift distributions for outboard aileron.

Figure 62.- Concluded.